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PAPER TRADE JOURNAL

OCTOBER 19, 1944

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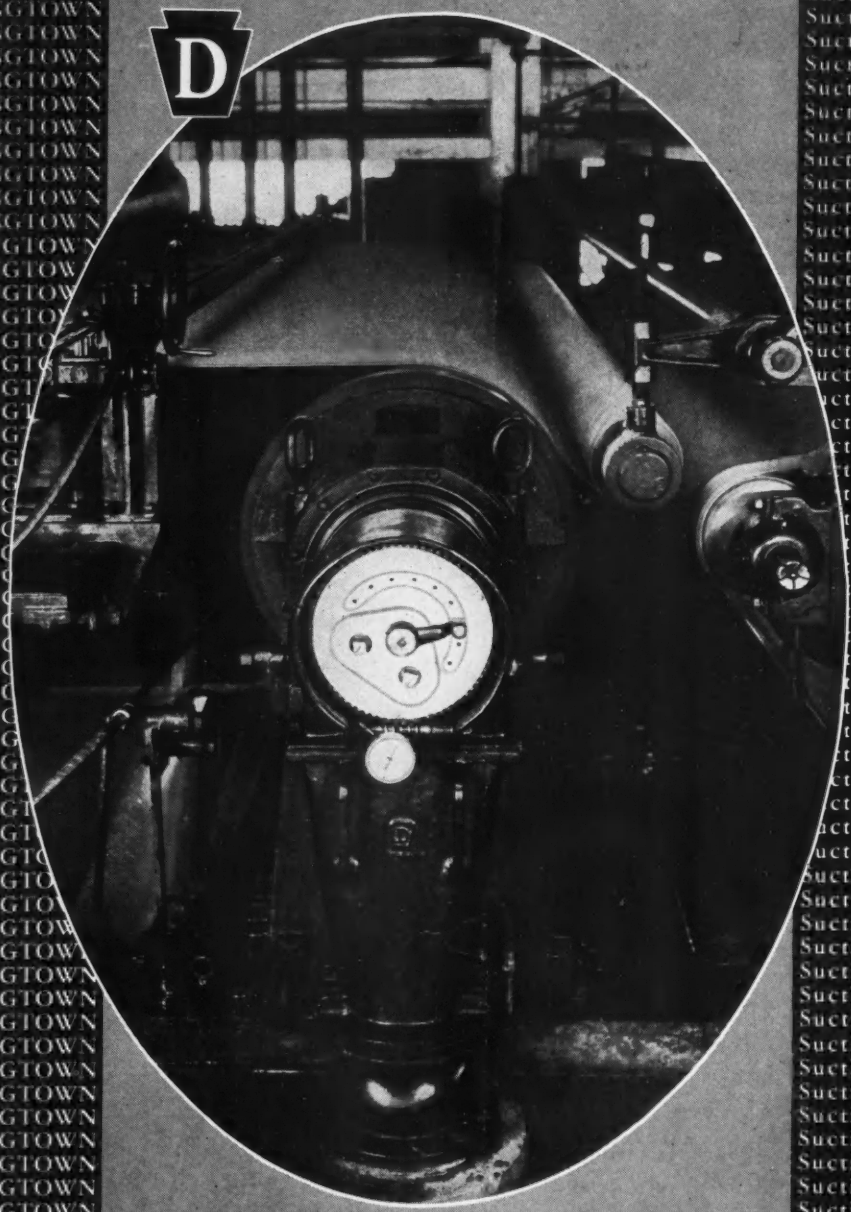

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ARTHUR E. GORDON
Executive Vice-Pres.
JOSEPH P. HORGAN
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R. G. MACDONALD
"TAPPI" Editor
F. B. GROSSE
Makeup Editor
LYNN M. LAMM
Washington Correspondent
All of 15 W. 47th St.

Western Representative:
H. K. VINTON
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Vol. 119, No. 16

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

October 19, 1944

Quebec Plans A Great Forest Exploitation

Will Be Most Ambitious Scheme of the Kind Ever Launched In History of Canada — Union Ferment Is Darkest Spot In Quebec Outlook—New Peak Value Is Reached In Production of Newsprint.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., October 16, 1944—Under the new Government which recently took office at Quebec the most ambitious scheme for the rational exploitation of the forests ever launched in Canada is being planned. This has been made plain by Premier Duplessis and his leading ministers and officials at the first provincial convention of the Quebec Forestry Association, which is conducting an intensive and province-wide campaign for forest conservation.

In setting forth the Government's objective, Omer Lussier, the provincial forestry engineer, outlined a plan by which between $300,000,000 and $350,000,000 will be required to carry out a 25-year scheme of rational exploitation, conservation and reforestation in the forests of the province, and an essential part of this scheme, according to the Hon. J. S. Bourque, provincial Minister of Lands and Forests, is "the greatest possible utilization of all the products and by-products of the forests." Avila Bedard, his deputy-minister, who is president of the Association, added that the province's forests would be used after the war "for the realization of large-scale peacetime projects."

An essential feature of the new Government's policy is the preservation of free enterprise as against public ownership and operation of large-scale business, and this point was particularly stressed at the meeting by members of the Government. Touching on this point, Premier Duplessis said "We must avoid revolutionary methods. What we need is what has made our strength in the past, that is stability and security." It was explained that the objective must be to assure a regular supply of raw materials to the industries depending on the forests, and in this connection the Premier detailed some of the measures considered necessary. For instance, he said that the forest industries already in existence must be given reasonable protection as regards their future. "Under pretence of progress," he said, "we must not multiply mills and concede forestry domains in an excessive way, for we must remain masters of our forests. We must repair the ravages done in the past through reckless exploitation and destruction by fire and insect pests, for by these means some of the richest forests have been impoverished and now are showing traces of "ruins" instead of producing riches. He thought it might be a good thing to limit the annual volume of lumber cuts in certain instances and to increase the ground rent on timber lands, and said he thought it a mistake to think that forests and colonization were "adversaries," for forests should help the colonists but should not be destroyed.

The Government plans to name forestry engineers in all organized regions of the province to teach Quebec farmers and settlers about sylviculture, and technicians will be given the facilities and opportunities to make whatever fundamental research is necessary.

Another proposal is the establishment in Quebec of small forestry villages whose populations would work exclusively at the rational and controlled exploitation of the woods, under the supervision of forestry experts.

"The main forestry probems," said Omer Lussier, Quebec forestry engineer, "are protection of the forests against fire, insects, tree diseases and abusive exploitation. Other problems connected with forestry are the social and economic aspects of the woods —forestry financing, education in forestry matters, and the influence of the forests on the promotion of the tourist, fish and game interests."

Other proposals are the encouragement by the federal and provincial governments of reforestation and restoration of privately-owned forest lands through the establishment of a long-terms credit system; adoption by the Quebec government of a law to prevent destruction of maple tree groves; creation of an Order of Forestry Merit; and measures to ensure that no new colonization centre be opened except to consolidate present colonies.

At the convention George Rowan, of Rawdon, Que., received the Association's forestry trophy and $100 in cash for the best rational conservation of small wood lots.

Union Labor Situation a Sore Spot

The weakest point in the outlook as regards the pulp and paper industry in Quebec is the situation as regards union labor. Most of the strikes in the industry in the past couple of years, and certainly the most serious which have taken place in Quebec, involving shutdowns on a large scale, have been caused by jurisdictional disputes between powerful labor unions. While the differences have been patched up for the time being, the fundamental issues still remain unsolved and threaten to cause a crisis at any time.

The issues are between the C.I.O. and the A.F.L., which are conducting bitter campaigns against each other, each seeking to obtain or retain exclusive jurisdiction in the various units of the pulp and

(Continued on page 34)

News of the Wisconsin Paper Industry

Kimberly-Clark Corp. Expects Post-War Expansion In Many of Its Paper Products—J. B. Nash Leaves Nekoosa-Edwards Co.—War Sidetracks Labor Case — Appleton Company Has Vacation Plan.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 16, 1944—Kimberly-Clark Corporation, Neenah, Wis., is planning for postwar expansion which will include increased manpower, over and above those permanent employees now in the armed services who will return to the corporation, Cola G. Parker, president, declared in an article in the September-October issue of Cooperation, employees' magazine, issued last week. The program also provides for equipment, maintenance and new plants.

The groundwork for these developments is being laid in the new financing program under which new preferred stock is to be offered for outstanding stock, which will have the effect of reducing fixed charges, and additional common stock is to be offered to present holders, to provide funds for the future program.

The corporation is expecting expansion in the manufacture of Kleenex, Delsey, wadding and wadding specialties, packing, insulation, book paper, wall paper and other specialties, Mr. Parker indicated.

J. B. Nash Leaves Nekoosa-Edwards Co.

J. B. Nash, Wisconsin Rapids, Wis., last week submitted his resignation, effective October 16, as manager of purchases and transportation of the Nekoosa-Edwards Paper Company, Port Edwards and Nekoosa, Wis., and will be succeeded by F. George Kilp, who for the last five years has been assistant to Mr. Nash in the woodlands operations. Mr. Nash has been associated with the company and its predecessor, the Nekoosa Paper Company, for 43 years, and Mr. Kilp has been with the company for 15 years.

Mr. Nash descends from a pioneer manufacturer, the late T. E. Nash, who, with the late L. M. Alexander and Senator William F. Vilas, organized the Nekoosa Paper Company in Nekoosa in 1893.

Directly after his graduation from the University of Wisconsin in 1901, he entered the manufacturing department of the Nekoosa Paper Company and was associated with it until he joined the Nekoosa-Edwards Paper Company when it incorporated in 1908 and absorbed the Nekoosa Paper Company.

War Sidetracks Labor Case

Demands of the war have sidetracked a labor case involving discharge of a worker from the Rhinelander Paper Company, Rhinelander, Wis. The Wisconsin State Supreme Court at Madison, Wis., is holding the case in suspension.

Involved are the discharged employe, Gwynne Nettling, the company, and Local 66 of the International Brotherhood of Papermakers (AFL). After his discharge, Nettling complained to the Wisconsin Employment Relations Board, accusing the company and union of unfair labor practices in putting into effect a closed shop clause of their labor agreement.

Nettling, discharged August 23, 1943, based his complaint on the contention that the company and union violated Section 111.06 of the Wisconsin statutes when, on July 30, 1943, they entered into a collective bargaining agreement which made union membership a condition of employment. He also contended that the union unreasonably refused to receive him into membership.

The union denied it had refused to admit Nettling, and challenged the board's jurisdiction on the ground that the company was engaged in interstate commerce. The board held a hearing and on October 7, 1943, found that both the company and the union had committed unfair labor practices.

The supreme court's decision to hold the case in suspension until after the war is based on the WLB order. The court expressed the opinion that "it would appear that reinstatement of the discharged employee at this time would be in conflict with the order of the National War Labor Board." The court's actual order provided suspension until after the war or until the WLB order ceases to be effective.

Dr. Jahn Addresses Chemists

Dr. Edwin C. Jahn, professor of forest chemistry at New York State College of Forestry, Syracuse, N. Y., spoke at a meeting of the Northeast Wisconsin section of the American Chemical Society last week at the Institute of Paper Chemistry. He returned recently from the Scandinavian countries and England, and discussed recent developments in wood utilization in the Scandinavian countries.

Fred Bentzen Honored

Fred Bentzen, superintendent of training and safety at the Lakeview mill of Kimberly-Clark Corporation, Neenah, Wis., was honored Thursday evening, October 12, at Hotel Menasha, Menasha, Wis., in observance of his completion of 25 years with the corporation. M. E. Palmer, general manager of the Lakeview mill, presented him with a gift from his fellow workers, during a dinner program which was featured by community singing led by Earl Williams. Fred Poppe was toastmaster. S. F. Shattuck, Kimberly-Clark vice president, and William Kellett spoke briefly. Lieutenant Donald Bentzen, holder of the Distinguished Flying Cross, a son of the guest of honor, also spoke. He recently completed 50 missions over enemy territory.

Appleton Paper Co. Has Vacation Plan

A plan for extended vacations for 1944 was announced last week for employes of the Appleton Coated Paper Company, Appleton, Wis., as the result of a series of collective bargaining conferences between the company and the Coating Mill Workers Union of Wisconsin.

The plan provides adjustments of vacations for employes with one to five years of service to a maximum of 48 hours vacation pay at straight time rate and for employes with more than five years, a total of 96 hours vacation at straight time rate.

The union, which is affiliated with Associated Unions of America, represents 250 employes of the firm.

There's no Shortage on "Planning for Post-War Operations"

We are unable to supply you with all the Hooker chlorine, caustic soda and bleaching powder you would like to have. And we're not going to offer you something just as good—because frankly we don't believe there is anything just as good as these Hooker chemicals.

However stymied you may be on present operations, it won't be too long now before Government's requirements will be lessened and you will be able to get the Hooker chemicals you want. If you are like most pulp and paper manufacturers, you are not wasting time bewailing the fact that you can't do what you'd like to do, but are using that time in planning your post-war operations, the replacement of old equipment, the introduction of new processes and new products, the modification and improvement of your present procedures.

Here is one spot where Hooker can be of help to you now. Our Technical Staff has devoted a great proportion of its time to the problems of your industry for many years. The information it has gained working in the field alongside pulp and paper manufacturers and in our own laboratories is available to you now. Some of the contributions of Hooker's Technical Staff have been published and are obtainable in printed form. Abstracts of three of these bulletins are given below. Copies are yours for the asking.

"Bleaching Procedure Design for High White - High Strength Kraft Pulps"

Bulletin No. 233

A procedure for high white, high strength kraft is developed step by step from a fundamental three stage procedure involving chlorination, caustic extraction and hypochlorite. The advantages and disadvantages of combining chlorination and hypochlorite reactions are discussed. Also, the use of batch and continuous methods are evaluated for the fundamental stages.

"Lime-Chlorine System in the Preparation of Calcium Hypochlorite"

Bulletin No. 234

Potentiometric studies have been made during progressive chlorinations of solutions containing 16 g. per liter, 32 g. per liter, and 52 g. per liter of calcium hydroxide at temperatures of 0° to 40° C. As a result of these studies the authors have found that: During the chlorination the hydrogen ion concentration decreased rather slowly at first with a very rapid increase in available chlorine content; further chlorination beyond a hydrogen ion concentration of 11.2 caused a very rapid decrease in pH and only a slight increase in available chlorine; when the lime is chlorinated below a pH of 8, the loss of available chlorine is very rapid, and at temperatures above 10° C., the loss is greater than that which can be maintained by the addition of chlorine, and on standing the solution loses practically all of its available chlorine; lime chlorinated to the "three second flash" of phenolphthalein, which corresponds to a pH of 11.2, produces bleach liquor which is stable for at least 48 hr.

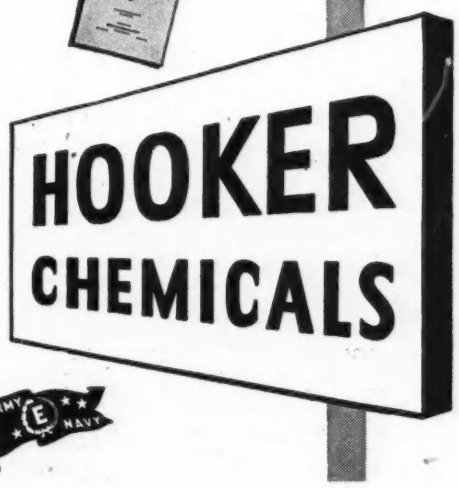
"Production and Use of Unsettled Bleach Liquor"

Bulletin No. 242

Growing demands for increased brightness in all grades of papers put a premium on economical production. The use of bleach liquors in some degree is necessary in small plants as well as large. Appreciable economies can be realized through the use of unsettled bleach liquor in the design and operation of an efficient plant. These economies are effected in low first cost, decreased labor expense and savings in chemicals through more efficient chlorine application and use of low cost limes. Satisfactory unsettled bleach liquors can be made by preliminary screening of milk of lime. Solids in screened milk of lime settle slowly, and fines are in such small amounts and in such small particles as to be eliminated in the various screening and washing operations prior to sheet formation.

With unsettled bleach liquors, excess alkalinity in the bleaching operation can be controlled by varying amounts of excess milk of lime. Operation of chlorination and testing for end point are the same as for settled liquor.

While we are confident these Bulletins will be of interest and of help to you, Hooker's Technical Staff is also available for consultation on any problems you may have involving chemicals in the pulp and paper manufacture field. Whether on plans for the future or on immediate problems, get in touch with us.



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Canada Sees No Serious Post-War Problems

Strong Demand For Newsprint Is Expected For Two Years After War — No Substantial Increase In Production Is Foreseen Now — New Abitibi Plan Not Yet Completed — Other Late Mill News.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., October 16, 1044—Serious readjustment problems after the war in Europe are not going to be prominent in the Canadian pulp and paper industry, according to those closely identified with some of the larger units of the industry. There will be little advance in production immediately following the lifting of restrictions on electrical power, one of the very first effects of the nearing end of the conflict, but by the end of the first quarter of 1945 some results will be apparent and by mid-year there should be a considerable improvement in production. A strong demand for newsprint is expected for a couple of years after the war, at least. It is pointed out that getting back to peacetime conditions will mean a large demand for advertising space to introduce the many new consumer products and re-establish in the public mind the virtues of many old products that have been in short supply and consequently not advertised much during the war. This not only indicates a higher demand for newsprint, but should also help to increase the civilian use of paper of many kinds. There will be new packages for new products and many of the new uses to which paper has been applied during the war years as a substitute for glass and other materials, will remain as permanent uses of kraft papers and pulp. Pent up pulp and paper demands will be felt for about a year after the cessation of hostilities, while the labor situation will prevent any great amount of preparation for or anticipation of this demand, at least for some months to come.

More Newsprint Going Overseas

Well informed paper men believe that there will be very little pulp or paper coming from Scandinavian sources for quite some time after the war because of the great European demand expected during reconstruction. Evidence of the increased diversion of Canadian newsprint shipments overseas to meet military needs, under instructions from the Combined Resources Board, is found in detailed figures for the first quarter of this year, just released. Notable changes included a decline in shipments to Eire to one-fifth the total in the 1943 quarter; doubling of shipments to United Kingdom; increase in shipments to Continental Europe; heavy shipments to Egypt, British South Africa and other African points; much heavier shipments to British India, Australia and New Zealand; moderate increases in exports to Latin American countries.

This diversion of newsprint overseas helps explain the fact that sundry papers in liberated countries, notably Italy and France, have resumed publication. As yet, amount of newsprint made available has been limited, and the overseas papers are mostly limited to one page each. However, there has been a considerable use of newsprint for publications for the military forces.

Finland to Pay in Forest Products

The provision in the armistice granted Finland by the United Nations, whereby Finland must compensate the Soviet Union for damages to the extent of $300 millions, stipulates that this amount be paid in kind, over a period of six years. This means timber, paper, cellulose, etc., will have to make up a large share of this indemnity.

Abitibi Plan Not Yet Completed

The report of the committee appointed by the Ontario Government, under the chairmanship of Frank Huges, to chart a course by which the Abitibi company may be taken out of receivership has not been completed yet, and it may be several weeks before it is ready for submission to the government for its approval. It is understood the government is not disposed to have any action taken that would seem to interfere with an agreement between the interested parties, except as a last resort.

Paper Salvage Good and Prices Low

In connection with the October drive for waste paper it is stated that before the war, Canadian consuming mills used about 13,000 tons of waste paper a month, obtained from domestic sources, and imported considerable tonnage from the United States. Canadian mills are now using between 19,000 and 20,000 tons a month, with the U. S. market cut off. Increased wartime demands on the finished products of the mills, and lower production of virgin pulp, are other factors making the present demand acute. Present supplies are approximately 12,415 tons, or about three weeks' requirements ahead of the machines. Collections run around 19,000 tons a month during the summer and drop to around 15,000 tons in the winter. About 20% of total requirements comes from voluntary sources and the remainder from regular commercial sources. Paper salvage has been well organized and the prices have been kept down. In contrast to the $2 to $5 per ton increases in the U. S., Canadian prices have been kept $4 to $11 lower. Here are the prices per ton to wholesale dealers, paid by consuming mills, for paper sorted, graded and baled up to mill acceptance standards: Mixed paper, Canadian price, $13, U. S., $19; newspapers, Canadian, $16, U. S., $20; corrugated paper, Canadian, $16.50, U. S., $28; book and magazine, Canadian, $29, U. S., $38.50.

Paper Sales Show Increase

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 16, 1944—Wholesale sales of paper and its products as reported by the Bureau of Census from figures of 76 firms, showed a total of $6,420,000 in August, 23 percent over July sales, but 3 percent under those reported for August a year earlier.

The August sales brought the total for the first 8 months of this year to $62,126,000, a gain of 6 percent over the corresponding months of last year.

Inventories in August were 1 percent under those of July, and were down 9 percent from August a year earlier.

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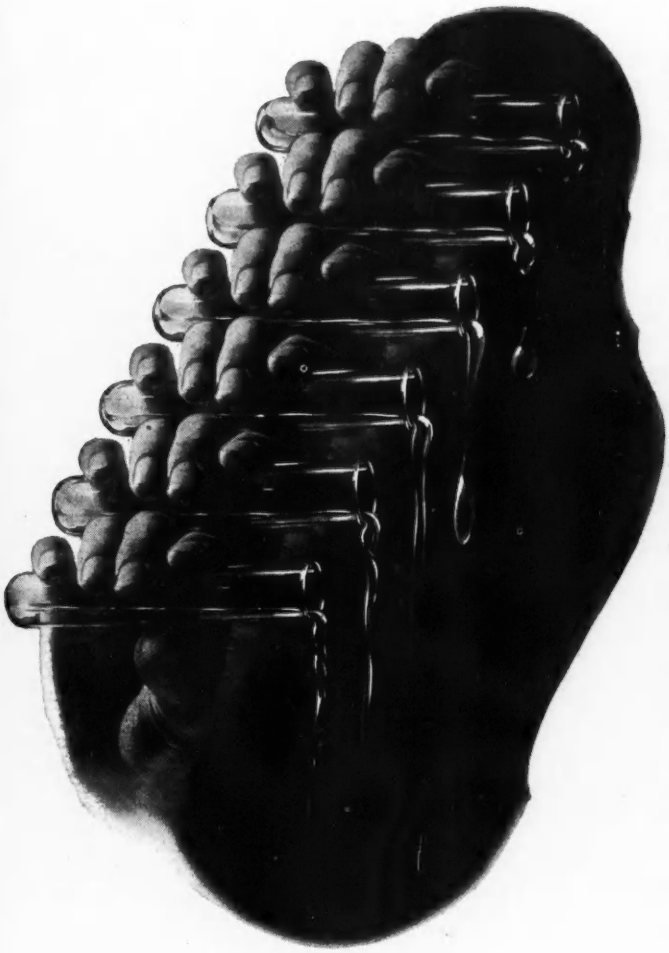

In the preparation of a product, you have undoubtedly often wished for a water soluble colloid available in several different viscosities. Perhaps you wanted a solution much thicker—or considerably thinner—in order to obtain the specific results desired.

To meet your most exacting needs, we have designed Methocel in a wide variety of viscosity types. Selection of the most suitable type is dependent, of course, on results required and manufacturing limitations. Only when the right viscosity is used are maximum economy and efficiency achieved.

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Methocel provides an unusual surface film or coating for many paper products. Here, selection of the correct viscosity type is of primary importance. It calls for application of the *thickest solution* which can be handled by the available equipment and which, at the same time, supplies sufficient solids to produce the required surface film. In this way, the Methocel coating is deposited on the surface and does not tend to penetrate the stock—providing maximum protection.

It should be noted, however, that because most machines and processes present different problems, it is necessary to determine carefully which Methocel type best fits your needs. Before adopting a specific Methocel type, we urge you to refer your problem to the Technical Service and Development Division.

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DOW

CHEMICALS INDISPENSABLE
TO INDUSTRY AND VICTORY

Scant Future Civilian Paper Supply Looms

Midwest Market Views Prospect of Continued Inadequate Paper Supplies With Grave Concern—Salesmen Become Movie Conscious —Paper Group To Hear Coated Paper Expert—Other Late News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., October 16, 1944—Gloom prevails in the Chicago paper market as far as the next year is concerned. Even if the German phase of the War were to end shortly paper trade executives here feel that it would be from six to ten months before the extreme market tightness could be lessened. Particularly is this situation considered applicable to krafts and all wrappings though there are many who feel that the situation will be no less tight in all business paper items including mimeos, sulphites, bonds, etc. The belief is that government regulations —a large paper consumer—and military operations during the first phases of peace will be sufficient to prevent any material loosening up.

Now that the government allocations program has been revealed there continues to be wonderment as to how the civilian market is to get anywhere near the volume it wants during the final quarter of 1944 and on into 1945. It is reported, too, that while waste paper collections have been comparatively good in this area, the wrapping paper and folding and setup box markets continue to be virtually non-existent as far as civilian supplies are concerned. Each day, local paper trade executives point out, increases the number of American military men abroad and intensifies the demand for all paper needed to ship supplies and equipment to foreign shores.

Paper Group To Hear Peter Massey

The Chicago Professional Paper Group holds its second meeting of the current season on Monday evening, October 16, with probably one of the most outstanding programs it has yet staged. Speaker of the evening will be Mr. Peter J. Massey of the H. P. Smith Paper Company, one of the most outstanding experts on machine coated papers in the entire country. He will discuss machine coated papers and the prospects for future uses of this product. It is reported that he will also review the outlook for both the machine coated paper and the regular coated paper types in a way that will be extremely helpful to everyone identified with the printing paper field. As former general manager of Combined Locks and as one closely assorted with the development of machine coated papers Mr. Massey is expected to draw an unusually large and interested audience. The October 16 meeting will also service to mark the final appearance of present officers of the comparatively new group, including Harold Alley of Tested Papers, Inc., who will preside as chairman for the last time. Newly elected officers, selected from a slate announced at the September 18 meeting, will be announced following the regular balloting procedure.

Salesmen Become "Movie Conscious"

The western division of the Salesmen's Association of the Paper Industry has two unusually fine sound motion pictures lined up for entertainment features during the next month. On Monday, October 16, the salesmen and guests who gather at the Hotel Sherman for noon interchange of experiences, will be privileged to view four sound and color films supplied by the State of Wisconsin, all pertaining to the scenic, sport and industrial wealth of the neighboring State. On November 6, through the efforts of Jack Taylor of the Mead Sales Company, the Association members and guests will view two interesting and unusual films being supplied by the United States Army. The two sound films are entitled "Communique No. 8" and "Timber to Tokio." According to Pat Patterson, Flambeau Paper Company, and vice president of the division, the SAPEYES will stick to movie films "as long as films so educational and entertaining can be secured."

Meanwhile, the division has again turned its back on the idea of combining weekly luncheons with the weekly Wailing Wall football luncheons at the Sherman. The combination was dropped one year ago because members considered they had too much serious business to take care of to be bothered with football reviews and forecasts. Evidently, with the stress of priorities and shortages on them, members feel the same way about it. At any rate, the Wailing Wall got under way last Monday without benefit of the attendance of paper salesmen who, instead, stuck to their own affairs in a round table of business conditions.

McMurtrie's Death Saddens Trade

The paper industry, and leading representatives of that industry, recently participated in numerous services and eulogies for one of the most distinguished members of an allied trade, Douglas C. McMurtrie, who died on September 29 at the age of 76. Mr. McMurtrie was director of typography for the Ludlow Typograph Company and was an authority on typography and the history of printing in the United States. Mr. McMurtrie had always generously worked with the paper industry and in recent months had addressed several paper groups on the subject of typography in its relation to paper.

Publishers To Discuss Newsprint

A"Newsprint Forum" will be one of the major features of the 60th annual meeting of the Inland Daily Press Association which convenes in Chicago on October 17 and 18. E. P. Adler, publisher of the Davenport, Iowa, Times, will preside over the forum and will introduce Matthew G. Sullivan, consultant of the WP Printing and Publishing Division who will discuss "What's Ahead in Newsprint." A question and answer period will follow. It is reported that the Newspaper Industry Advisory Committee has already urged the War Production Board to continue controls until the supply of newsprint has become adequate. The idea behind the recommendation is to avoid price-kiting scrambles for paper stocks such as were experienced during the first World War. Mr. Sullivan is expected to discuss not only the duration of the controls but the recent changes in L-240 covering newsprint allocation and control.

It's a pretty safe bet—that if you're *not* using Heppenstall Chipper Knives—you're losing money.

Heppenstall *guarantees* their knives to show a *lower* unit cost than any other make on the market.

Remember, that original cost is secondary to—operating hours between grinds, grinds per knife, chipper "down time," sawdust loss and oversized chips.

Let us prove that a Heppenstall E.I.S. Chipper Knife—the highest priced knife in the world—will handle your logs for *considerably* less money than any other one you can buy. Write for quotation. Heppenstall Company, Pittsburgh, Pa.

What are you paying for chips?

HEPPENSTALL

E. I. S. Chipper Knives

are guaranteed to cut your costs

Production of Paper and Consumption of Fibrous Materials in 1943 and 1942

The accompanying tables show statistics on the production of paper and paperboard in the United States and on the consumption of wood pulp and other fibrous materials in the manufacture of paper and paperboard during 1943 and 1942, classified by geographic region and by state. The data cover all paper and paperboard mills and the tables present, on a geographic basis, revisions of the information shown in "Census of Pulp Mills and of Paper and Paperboard Mills: 1943," Facts for Industry, Series 24-1-2.[1] The data on the production of paper and paperboard were collected and compiled by the Industry Division of the Bureau of the Census for the War Production Board, while the statistics on the consumption of wood pulp and other fibrous materials in the manufacture of paper and paperboard were compiled by the Bureau of Census from data collected by the War Production Board.

Tables 1, 2 and 3

This release consists of three tables. Tabe 1 presents information on the total production of paper and paperboard and the total consumption of wood pulp and other fibrous materials by the paper and paperboard manufacturing industry. Table 2 contains data on the production of paper and paperboard by type of paper, while Table 3 presents information on the consumption of wood pulp and other fibrous materials in the manufacture of paper and paperboard by type of fibrous material. In all three tables the same geographic divisions are used in so far as possible, although a few minor variations were necessary in Tables 2 and 3 in order to comply with the Census rule governing the disclosure of data for individual establishments.

Regional Presentation

These tables are designed to show data on the pulp and paper and paperboard industries in as much detail as possible by geographic region and by state, and to facilitate this purpose, a regional rather than a state presentation has been adopted. For each region, data are shown for each of the several states where it is possible to do so and still comply with the Census rule prohibiting the disclosure of information for individual establishments. Where it is not possible to show data for a state separately, the figures are combined with those for an adjacent state. This procedure makes it possible to show somewhat more detailed information for geographic regions and reduces the magnitude of data shown under the miscellaneous classification, "All other states."

Address Inquiries to Census Bureau

Inquiries regarding these data should be addressed to Bureau of the Census, Washington 25, D. C.

[1]This publication should be consulted for information on the more detailed classes of paper and paperboard as well as for a complete description of the content and comparability of the broad classes of pulp, paper and paperboard. Revised data on the consumption of wood pulp and other fibrous materials for the United States as a whole are shown in Pulp and Paper Series, Special Report D. "Wood Pulp and Other Fibrous Materials: Production, and Consumption in the Manufacture of Paper and Paperboard in the United States, 1940-1943," Facts for Industry, Series 24-3-1.

TABLE 1—PRODUCTION OF PAPER AND PAPERBOARD AND CONSUMPTION OF WOOD PULP AND OTHER FIBROUS MATERIALS IN THE MANUFACTURE OF PAPER AND PAPERBOARD BY REGION AND BY STATE: 1943 AND 1942

(Tons of 2,000 pounds)

Region and state	1943 Production of paper and paperboard	1943 Consumption of wood pulp and other fibrous materials	1942 Production of paper and paperboard	1942 Consumption of wood pulp and other fibrous materials
United States total	17,035,688	18,199,442[2]	17,083,862	17,857,930[2]
New England States, total	2,296,765	2,396,652	2,268,258	2,346,035
Maine	1,104,672	1,117,547	1,125,185	1,142,102
New Hampshire	200,060	212,295	198,929	209,943
Vermont	85,161	90,425	82,996	86,625
Massachusetts	624,282	662,133	598,815	626,760
Rhode Island and Connecticut	282,590	314,252	262,333	280,605
Middle Atlantic States, total	3,489,789	3,651,270	3,596,077	3,522,773
New York	1,523,945	1,599,537	1,649,451	1,633,018
New Jersey	866,472	958,810	835,429	911,402
Pennsylvania	1,099,372	1,092,923	1,111,197	978,353
East North Central States, total	4,734,699	5,151,159	4,617,621	4,931,375
Ohio	1,209,677	1,309,109	1,135,599	1,171,122
Indiana	328,074	421,847	304,396	334,799
Illinois	686,445	787,661	699,857	978,454
Michigan	1,272,429	1,391,131	1,238,736	1,254,237
Wisconsin	1,238,074	1,241,411	1,239,033	1,192,763
West North Central and Mountain States, total	689,020	761,584	678,094	750,970
Minnesota	504,111	547,915	496,685	543,976
Iowa, Missouri, Kansas and Colorado	184,909	213,669	181,409	206,994
South Atlantic States, total	2,379,489	2,525,514	2,281,524	2,431,150
Delaware	33,870	39,604	38,308	30,435
Maryland and District of Columbia	202,107	208,923	198,679	196,233
Virginia	651,148	693,053	639,007	686,051
West Virginia	22,939	25,585	24,028	21,421
North Carolina	250,922	275,954	242,664	275,411
South Carolina	482,220	514,399	435,327	471,275
Georgia and Florida	736,283	767,996	703,561	750,324
East South Central States, total	800,507	908,954[2]	829,247	911,175[2]
Tennessee	178,449	172,379	170,949	167,339
Alabama	271,217	298,877	310,405	331,213
Mississippi	350,841	437,698[2]	347,893	412,623[2]
West South Central States, total	1,335,591	1,416,564	1,411,077	1,531,326
Louisiana	1,019,132	1,113,983	1,089,899	1,200,749
Arkansas and Texas	316,459	302,581	321,178	330,577
Pacific States, total	1,309,828	1,387,745	1,401,964	1,433,126
Washington	598,704	626,868	665,402	683,887
Oregon	312,390	331,847	335,333	343,715
California	398,734	429,030	401,229	405,524

[2]Revised in accordance with the corrected reports of three mills.

TABLE 2—PRODUCTION OF PAPER AND PAPERBOARD BY MAJOR TYPES, BY REGION AND BY STATE: 1943 AND 1942

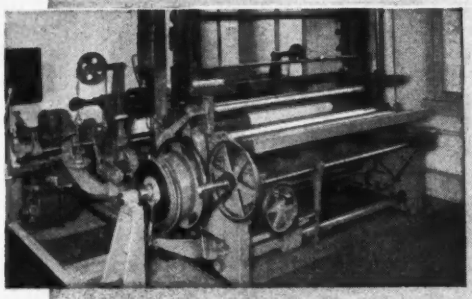
(Tons of 2,000 Pounds)

Type of paper and paperboard, region and state	1943	1942
Newsprint, United States total	811,309	967,211
New England and Middle Atlantic States, total	508,131	598,583
Maine	457,098	503,087
Vermont Massachusetts and New York	51,042	95,496
East and West North Central States (Michigan, Wisconsin and Minnesota)	44,451	60,544
West South Central and Pacific States (Texas, Washington and Oregon)	258,727	308,084
Groundwood printing and specialty papers, United States total	585,673	610,168
New England States, total	177,651	192,112
Maine	175,207	179,028
New Hampshire, Vermont and Massachusetts	12,444	13,084
Middle Atlantic States (New York and Pennsylvania)	198,652	190,023
East North Central States (Ohio, Michigan and Wisconsin)	104,851	127,935
West North Central and Mountain States (Minnesota and Colorado)	83,624	80,222
All other states (North Carolina, Texas, Washington and Oregon)	10,895	19,876
Rock paper, United States total	1,592,278	1,704,029
New England States, total	284,167	287,924
Maine, New Hampshire and Vermont	184,913	183,602
Massachusetts	99,224	104,322
Middle Atlantic States, total	419,466	473,404
New York and New Jersey	161,600	188,964
Pennsylvania	253,866	284,440

# of Paper Travel

FOR WINDERS, SLITTERS

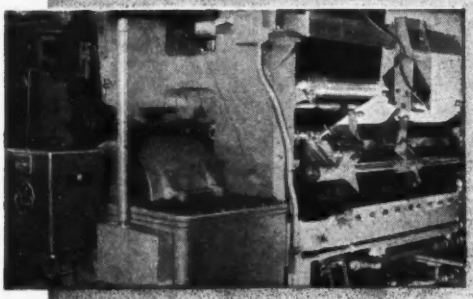
Accurate side register control as paper travels at high speed is initiated by a photoelectric scanning head at the edge of the sheet (shown just below counterweight). An amplidyne powers the motor which corrects the roll position.



G-E side-register control on Cameron Machine Co. paper winder and slitter

FOR COLOR REGISTER

Here's extreme accuracy of register at high speed—a multicolor rotogravure press with paper speed of 1000 ft per min! A register mark made by the first impression is photoelectrically matched with a register slit on the next printing cylinder.



Installation at Neo Gravure Co., New York City.

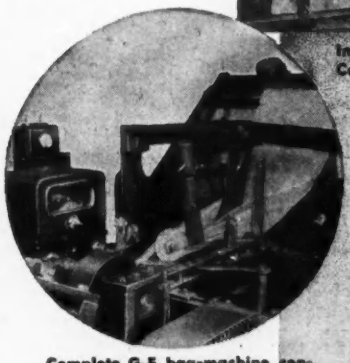
FOR BAG-MAKING MACHINES

Web-register control for precise cut-off begins with photoelectric scanning of register marks. An amplidyne-powered motor applies a differential correction between draw-roll speed and knife-roll speed.

Installations at Arkell and Smiths, Canajoharie, N. Y.

OR WHAT-HAVE-YOU?

Whenever paper in motion creates a control problem for you, you'll find G.E. ready with a practical solution, derived from wide experience on all kinds of paper-mill and printing-plant drives, as well as from electronic research. Let our application engineers give you the facts on the operating and maintenance experience of electronic controls now in regular use. You'll find convincing evidence of high operating continuity under difficult service conditions. *General Electric Co., Schenectady 5, N. Y.*



Complete G-E bag-machine control at Bemis Bag Co., Peoria, Ill.

Buy all the BONDS you can—*and keep all you buy!*

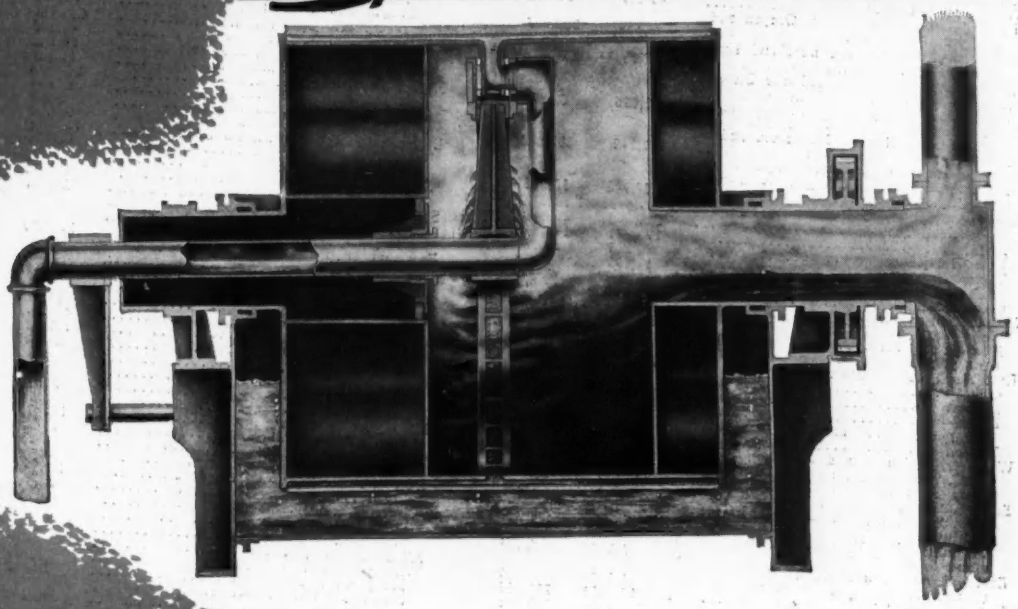
Type of paper and paperboard, region and state	1943	1942
East and West North Central States, total	661,216	691,260
Ohio	212,361	231,276
Illinois and Michigan	161,621	167,857
Wisconsin and Minnesota	287,234	292,127
South Atlantic States (Delaware, Maryland, District of Columbia, Virginia and North Carolina)	125,180	141,911
All other states (Tennessee, Louisiana, Texas, Washington and Oregon)	103,849	109,530
Fine papers, United States total	1,020,601	1,055,475
New England States, total	292.857	286,249
Maine	87,534	84,251
New Hampshire and Vermont	33,359	32,226
Massachusetts and Connecticut	171,964	169,772
Middle Atlantic States, total	219,660	221,172
New York	108,722	110,959
New Jersey and Pennsylvania	110,938	110,213
East and West North Central States, total	369,306	397,426
Ohio, Indiana and Illinois	126 584	151.663
Michigan	96,004	91,999
Wisconsin and Minnesota	146.718	153,764
South Atlantic States, total	69,269	85,336
Delaware, Maryland and District of Columbia	14.911	21,463
Virginia	11,641	12,652
North Carolina	42,717	51,221
All other states (Alabama, Texas, Louisiana, Washington, Oregon and California)	69,509	65,292
Wrapping paper, United States total	2,305.532	2,525.841
New England States, total	233,694	238,213
Maine	64.421	75.615
New Hampshire	68.276	63,608
Vermont, Massachusetts and Connecticut	100.997	98.990
Middle Atlantic States, total	237.782	304 387
New York	121,988	178.654
New Jersey and Pennsylvania	115,794	125,733
East and West North Central States, total	531.889	550,507
Ohio, Indiana and Illinois	81.554	94.110
Michigan	140.310	132,915
Wisconsin and Minnesota	310,035	323.482
South Atlantic States, total	391.910	367.910
Maryland, District of Columbia and Virginia	137.013	178,622
West Virginia	4,934	4,589
North Carolina, South Carolina, Georgia and Florida	249,963	184,699
East and West South Central States, total	679.451	736.466
Alabama	187,654	239,084
Mississippi, Arkansas, Louisiana and Texas	441,797	497,382
Pacific States, total	280.806	328.358
Oregon	86.657	103.120
Washington and California	194,149	225,238
Special industrial papers, United States total	196,105	187,897
New England States (Maine, New Hampshire, Vermont, Massachusetts and Connecticut)	81,935	78,075
Middle Atlantic States (New York, New Jersey and Pennsylvania)	34,580	45,758
East and West North Central States, total	17,132	16,546
Ohio, Indiana, Illinois and Michigan	12,756	15,266
Wisconsin and Minnesota	4,376	1,280
All other States (Maryland, Virginia, West Virginia, North Carolina, Alabama, Arkansas, Louisiana, Washington, Oregon and California)	62,458	47,518
Sanitary paper, United States total	806.023	811,343
New England States, total	113,226	115,124
Maine and New Hampshire	76.439	75.883
Vermont and Massachusetts	26.572	27,640
Connecticut	10.215	11.601
Middle Atlantic States, total	385 989	394.429
New York	187.568	198,168
New Jersey	13,365	12,364
Pennsylvania	185 056	183,897
East and West North Central States, total	232.321	229.114
Ohio and Michigan	5.316	4,368
Wisconsin and Minnesota	227,005	224,746
All other states (Delaware, Virginia, Arkansas, Washington Oregon and California)	74.487	72.676
Tissue paper, United States total	162,766	170,653
New England States (Maine, New Hampshire, Vermont, Massachusetts and Connecticut)	11,250	12,431
Middle Atlantic States, total	25.868	22 890
New York	38,440	36,397
New Jersey and Pennsylvania	14.705	8.074
East North Central States, total	58 310	63,272
Ohio, Indiana and Michigan	30.526	33.298
Wisconsin	27,784	29,974
All other states (North Carolina, Alabama, Arkansas, Washington, Oregon and California)	40.061	50,479
Absorbent paper, United States total	88 754	64 530
New England States, total	25.002	11,198
Maine	8.864	944
New Hampshire and Vermont	6.686	3.157
Massachusetts and Connecticut	9 452	7 097
Middle Atlantic States, total	25.868	22 890
New York	13.176	11.994
New Jersey and Pennsylvania	12.742	10.886
East and West North Central States, total	12 607	8.244
Ohio, Indiana and Illinois	6.001	4.600
Michigan	2,616	1,914
Wisconsin and Minnesota	3,990	1,730
All other states (Delaware, District of Columbia, Virginia, Alabama, Arkansas, Washington and Oregon)	24 777	22,208
Building papers, United States total	877,582	1,001,383
New England States (Maine, Massachusetts, Rhode Island and Connecticut)	39.022	48.906
Middle Atlantic States, total	296 288	349.821
New York	71,092	100,549
New Jersey	155,296	170,073
Pennsylvania	69.900	79,200
East North Central States, total	290,254	326,272
Ohio and Indiana	97.971	110,021
Illinois	172,333	199,108
Michigan and Wisconsin	19,950	17,143
West North Central States (Minnesota, Missouri and Kansas)	34.063	37.529
Pacific States, total	104,910	115,016
Washington	2 636	6.675
California	102,274	108,341
All other states (Maryland, Virginia, Georgia, Tennessee, Louisiana and Texas)	113,045	123,839
Paper not elsewhere classified, United States total, (New Hampshire, Vermont, Massachusetts, New York, Pennsylvania, Indiana, Michigan, Wisconson, Minnesota, Missouri and Washington)	129	16,148
Paperboard, United States total	8,538 816	7,969,184
New England States, total	570.819	488,467
Maine	50.273	29.220
New Hampshire	22,575	23,159
Vermont	19.612	18.634
Massachusetts	244.009	210,449
Rhode Island and Connecticut	234 350	207.005
Middle Atlantic States, total	1,568.241	1,449.886
New York	552.001	509,753
New Jersey	608.612	567,836
Pennsylvania	407.628	377.297
East North Central States, total	2,533 208	2,274.928
Ohio	704.073	567,674
Indiana	305.397	275.035
Illinois	490.172	472.617
Michigan	793.894	761,420
Wisconsin	239,672	198,182
West North Central and Mountain States, total	450,487	426,800
Minnesota	275,317	256.743
Iowa, Missouri, Kansas and Colorado	175.150	170.057
South Atlantic States, total	1,696,383	1,594,752
Delaware, Maryland and District of Columbia	89.815	77 362
Virginia and West Virginia	478.126	417,005
North Carolina	135.238	124.904
South Carolina and Georgia	575.049	519,861
Florida	418.155	455.620
East South Central States, total	463.475	439,581
Tennessee	114,282	106,725
Alabama and Mississippi	349.193	332,856
West South Central States, total	788.537	804.013
Arkansas and Texas	45.490	53.500
Louisiana	743 057	750 513
Pacific States, total	517,686	490,757
Washington	199.926	191,308
Oregon and California	317,760	299,449

TABLE 3—CONSUMPTION OF WOOD PULP AND OTHER FIBROUS MATERIALS IN THE PRODUCTION OF PAPER AND PAPERBOARD BY TYPE OF MATERIAL, BY REGION AND BY STATE: 1943 AND 1942

(Tons of 2,000 pounds)

Type of fibrous material, region and state	1943	1942
All types of wood pulp, United States total	10,635,320[a]	11,038,020[a]
New England States, total	1,685,643	1,722,625
Maine	1,098,986	1,132,515
New Hampshire	183,229	181,237
Vermont	78,248	76 533
Massachusetts	283,745	290,233
Rhode Island and Connecticut	41,435	42,107
Middle Atlantic States, total	1,678.653	1,771,935
New York	928.522	1,001,341
New Jersey	207.287	201,643
Pennsylvania	542.844	568,951
East North Central States, total	1,967.413	2,047,220
Ohio	394,415	431,507
Indiana	26.699	30.527
Illinois	86,941	72,111
Michigan	489.120	503,158
Wisconsin	970,238	1,009,917
West North Central and Mountain States, (Minnesota, Iowa, Missouri, Kansas and Colorado)	364.853	383,930
South Atlantic States, total	2,065.677	2,071,164
Delaware	13,585	11,421
Maryland and District of Columbia	73,376	75,704
Virginia	573.658	595,794
West Virginia	3,070	3,843
North Carolina	207,322	213,785
South Carolina and Georgia	747.591	710.181
Florida	447.075	460,436
East South Central States, total	825.224[a]	839.319[a]
Tennessee and Alabama	387.526	426,696
Mississippi	437.698[a]	412,623[a]
West South Central States, total	1,096,529	1,176.050
Louisiana	824,717	887.604
Arkansas and Texas	271,812	288,446
Pacific States, total	951.328	1,025.777
Washington	553.656	617,505
Oregon	330,998	343,664
California	66.674	64,608
Groundwood, United States total	1,768.016[a]	1,926.099[a]
New England States, total	630.448	672,677
Maine	568.342	608.123
New Hampshire	27,710	30.083
Vermont	19.212	19,540
Massachusetts	9.578	8,645
Rhode Island and Connecticut	5.606	6,286
Middle Atlantic States, total	349.622	373.869
New York	283,977	314,331
New Jersey	5,846	5,866
Pennsylvania	59,799	53,672
East North Central States, total	292,669	301,217
Ohio	12,531	7,839

OLIVER *Ringvalve* WASHER



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- TONNAGE
- CLEAN PULP
- CHEMICAL RECOVERY

The design of the Oliver Ringvalve Washer assures maximum vacuum where its work must be done . . . *at the sheet.*

The design eliminates unnecessary frictional resistance to the discharge of air and water. As a result of 37 years of experience in designing Drum Filters for the nine basic industries, we have learned how to eliminate friction by short travel of the liquor.

In the Oliver Ringvalve Washer the flow of the liquor is direct . . . there are no tortuous turns and restrictions.

The design of the Oliver Ringvalve definitely assures exceptionally high capacity.

Today, Oliver Ringvalve Washers and Deckers are operating in many mills—giving entire satisfaction.

Yes, for a high-tonnage washer, with high-washing efficiency and low chemical loss . . . the Oliver Ringvalve Washer is unquestionably a money-saving investment.

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OLIVER UNITED FILTERS INC.

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33 West 42nd Street

San Francisco 11
California
Western Sales Division
Oakland 1, California
2900 Glascock Street

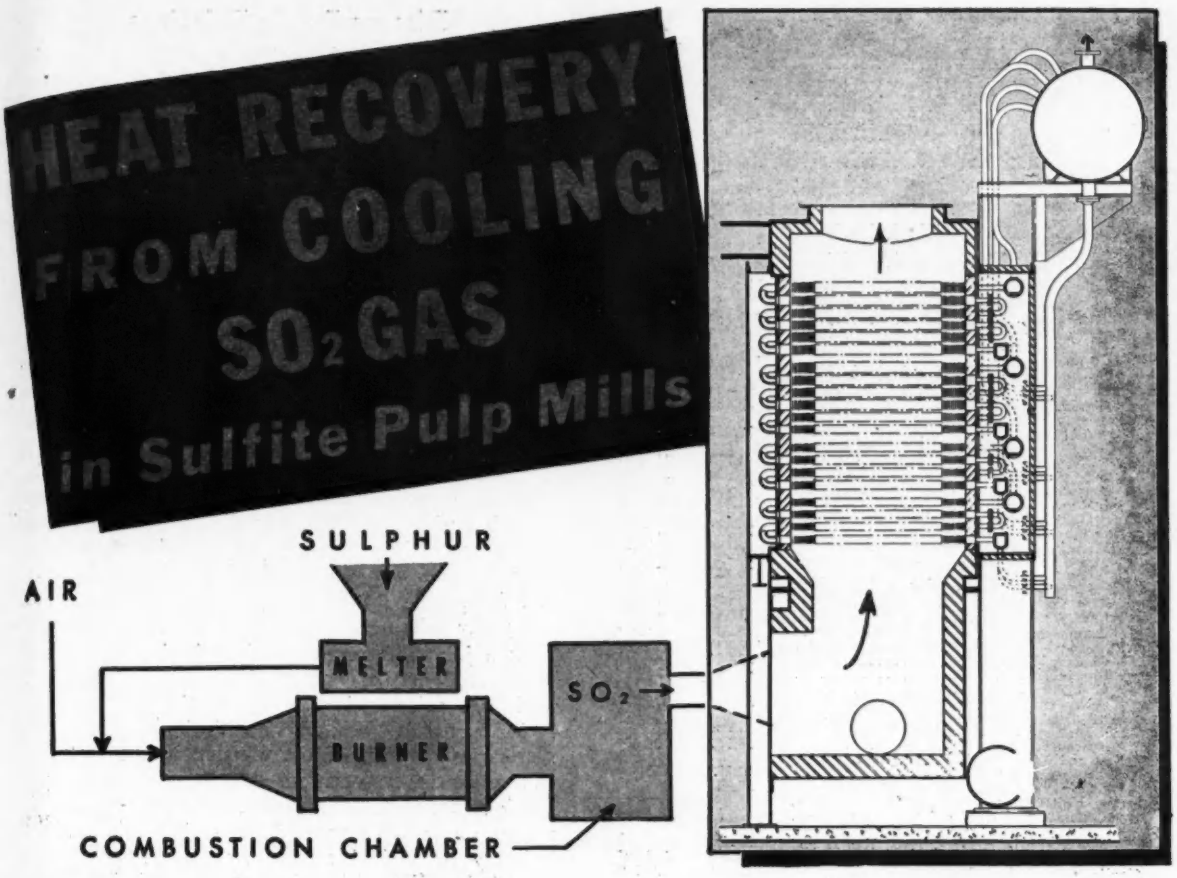
Chicago 1, Ill.
221 N. LaSalle Street

Sales & Manufacturing Representative
E. Long Limited
Orillia, Canada

Factories: Oakland, Calif. — Hazleton, Pa. — Orillia, Canada — Melbourne, Australia

Type of fibrous material, region and state	1943	1942
Indiana	4,404	4,579
Illinois	5,539	7,254
Michigan	73,462	67,378
Wisconsin	196,733	214,167
West North Central States, (Minnesota, Iowa, and Kansas)	72,355	96,481
South Atlantic and East South Central States, (Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Tennessee, Alabama and Mississippi)	119,456	121,098
West South Central States, (Arkansas, Louisiana, and Texas)	49,307	52,100
Pacific States, (Washington, Oregon and California)	254,159	308,657
Defibrated, exploded, asplund fibre and similar grades, United States total	632,126[1 2]	527,072[1 2]
New England and Middle Atlantic States, (Maine, Massachusetts, Rhode Island, New York, New Jersey and Pennsylvania)	85,036	67,577
East North Central and West North Central States, (Ohio, Illinois, Minnesota and Missouri)	109,142	87,870
All other states, (Maryland, Virginia, Mississippi, Florida, Georgia, Louisiana and California)	437,948[1]	371,625[1]
Unbleached sulphite, United States total	1,449,419	1,581,152
New England States, total	285,190	296,404
Maine	193,271	199,818
New Hampshire	30,245	32,071
Vermont	11,091	9,813
Massachusetts	41,953	42,197
Connecticut	8,630	12,505
Middle Atlantic States, total	482,175	511,028
New York	302,660	325,352
New Jersey	74,480	71,042
Pennsylvania	105,035	114,634
East North Central States, total	449,399	483,610
Ohio	46,565	59,377
Indiana	8,930	11,071
Illinois	4,791	6,648
Michigan	137,529	138,430
Wisconsin	251,584	268,084
West North Central and Mountain States, (Minnesota, Iowa, Missouri, Kansas and Colorado)	44,677	58,314
South Atlantic States, total	8,210	6,474
Delaware, Maryland and District of Columbia	5,940	4,249
Virginia, West Virginia, North Carolina and South Carolina	2,270	2,225
East and West South Central States, (Tennessee, Alabama and Texas)	1,292	4,009
Pacific States, total	178,476	221,253
Washington and Oregon	160,905	195,845
California	17,571	25,408
Bleached sulphite, United States total	1,442,300	1,498,075
New England States, total	391,314	392,186
Maine	195,714	181,944
New Hampshire	52,837	50,276
Vermont	5,011	4,846
Massachusetts	127,393	142,836
Connecticut	10,359	12,284
Middle Atlantic States, total	323,178	340,835
New York	168,847	166,902
New Jersey	8,191	8,937
Pennsylvania	146,140	164,996
East and West North Central States, total	588,268	638,110
Ohio	96,710	124,963
Indiana and Illinois	11,590	15,289
Michigan	139,267	153,841
Wisconsin, Minnesota, Missouri and Kansas	340,701	344,017
South Atlantic and East South Central States, total	24,516	27,447
Delaware	7,468	7,797
Maryland and District of Columbia	2,258	2,440
Virginia	8,558	9,795
West Virginia, North Carolina, South Carolina, Florida, Tennessee, and Alabama	6,232	7,415
Pacific States, total	115,024	99,497
Washington and Oregon	107,566	91,197
California	7,458	8,300
Unbleached sulphate, United States total	3,583,851	3,801,610
New England States, total	133,643	128,948
Maine	3,637	4,933
NewHampshire and Vermont	86,631	84,093
Massachusetts	39,893	36,307
Connecticut	3,482	3,615
Middle Atlantic States, total	192,891	215,764
New York	87,555	111,482
New Jersey	80,417	82,870
Pennsylvania	24,919	21,412
East and West North Central and Mountain States, total	331,357	345,644
Ohio	44,980	41,481
Indiana and Illinois	24,681	20,352
Michigan	84,065	97,424
Wisconsin, Minnesota, Iowa, Missouri, Kansas and Colorado	177,631	186,387
South Atlantic States, total	1,535,499	1,572,128
Delaware, Maryland and Virginia	350,749	370,610
West Virginia	2,356	3,011
North Carolina	35,526	39,338
South Carolina and Georgia	740,344	700,414
Florida	406,524	458,755
East South Central States, (Tennessee, Alabama and Mississippi)	201,806	261,073
West South Central States, (Arkansas, Louisiana and Texas)	889,760	982,958
Pacific States, (Washington, Oregon and California)	298,895	295,095
Semi-bleached sulphate, United States total	163,066	164,384
New England States, total	13,939	16,629
Maine, New Hampshire and Vermont	11,119	13,929
Massachusetts and Connecticut	2,820	2,700
Middle Atlantic States, total	3,572	4,042
New York, and New Jersey	1,349	1,616
Pennsylvania	2,223	2,426
East and West North Central States, total	43,466	46,462
Ohio	9,709	11,908
Indiana, Illinois and Michigan	9,196	10,470
Wisconsin, Minnesota and Iowa	24,521	23,984
South Atlantic States, (Delaware, Maryland, Virginia, West Virginia, North Carolina and Florida)	50,436	53,351
All other states, (Tennessee, Alabama, Louisiana, Arkansas, Texas, Washington, Oregon and California)	51,693	44,000
Bleached sulphate, United States total	683,181	666,646
New England States, total	43,623	36,937
Maine, New Hampshire and Vermont	23,762	22,949
Massachusetts and Connecticut	19,861	13,988
Middle Atlantic States, total	109,110	113,686
New York	11,714	10,671
New Jersey	3,467	2,674
Pennsylvania	93,929	102,141
East and West North Central States, total	141,511	135,494
Ohio	97,193	96,331
Indiana and Illinois	3,021	2,380
Michigan	16,866	11,051
Wisconsin, Minnesota, Iowa and Missouri	24,431	25,732
South Atlantic States, (Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina and Florida)	190,129	189,659
East and West South Central States, (Alabama, Tennessee, Mississippi, Arkansas, Louisiana and Texas)	184,020	169,866
Pacific States, (Washington, Oregon and California)	14,788	17,004
Soda, United States total	455,892	468,661
New England States, total	122,722	119,671
Maine	80,405	81,523
New Hampshire	4,012	3,442
Vermont	1,043	930
Massachusetts	35,212	32,428
Connecticut	2,050	1,148
Middle Atlantic States, total	147,276	152,019
New York	51,729	51,143
New Jersey	3,335	1,226
Pennsylvania	92,212	99,650
East and West North Central States, total	123,424	123,029
Ohio	71,369	77,036
Indiana and Illinois	4,795	3,633
Michigan	20,832	18,644
Wisconsin and Minnesota	26,428	23,716
All other states, total	62,470	73,942
Delaware and District of Columbia	1,731	1,390
Maryland and Virginia	12,443	10,954
North Carolina, Tennessee, Alabama, Texas, Washington and California	48,296	61,598
Semi-chemical, off-quality, screenings and miscellaneous, United States total	457,469[2]	404,321[2]
New England States, total	28,745	29,874
Maine	18,332	17,615
New Hampshire	4,689	4,204
Vermont	686	231
Massachusetts and Rhode Island	4,372	7,391
Connecticut	666	233
Middle Atlantic States, total	21,812	18,414
New York	14,168	12,958
New Jersey and Pennsylvania	7,644	5,456
East and West North Central States, total	136,038	115,019
Ohio and Indiana	4,648	8,618
Illinois	2,297	1,426
Michigan	8,499	6,148
Wisconsin, Minnesota and Iowa	120,594	98,827
South Atlantic States, total	112,539	109,095
Delaware, District of Columbia, Maryland and Virginia	76,094	67,107
North Carolina, South Carolina, Georgia and Florida	36,445	41,988
East and West South Central States, (Tennessee, Alabama, Mississippi, Arkansas, Louisiana and Texas)	99,129	80,103
Pacific States, total	59,206	51,816
Washington and Oregon	49,441	43,378
California	9,765	8,438
All fibrous materials other than wood pulp, United States total	7,564,122	6,819,910
New England States, total	711,009	623,410
Maine	18,561	9,587
New Hampshire	29,066	28,706
Vermont	12,177	10,092
Massachusetts	378,388	336,527
Rhode Island and Connecticut	272,817	238,498
Middle Atlantic States, total	1,972,617	1,750,838
New York	671,015	631,677
New Jersey	751,523	709,759
Pennsylvania	550,079	409,402
East North Central States, total	3,183,746	2,884,155
Ohio	914,694	739,615
Indiana	395,148	304,272
Illinois	700,720	906,343
Michigan	902,011	751,079
Wisconsin	271,173	182,846
West North Central and Mountain States, (Minnesota, Iowa, Missouri, Kansas and Colorado)	396,731	367,040
South Atlantic States, total	459,837	359,986
Delaware, Maryland, and District of Columbia	161,566	139,543
Virginia and West Virginia	141,910	107,835
North and South Carolina	127,401	88,837
Georgia and Florida	28,960	23,771
East South Central States, (Tennessee and Alabama)	83,730	71,856
West South Central States, (Louisiana, Arkansas and Texas)	320,035	355,276
Pacific States, total	436,417	407,349
Washington and Oregon	74,061	66,438

HEAT RECOVERY FROM COOLING SO_2 GAS in Sulfite Pulp Mills



The Foster Wheeler SO_2 waste heat boiler fulfills two functions in sulfite pulp digesting. First, it absorbs heat from sulfur dioxide gases, cooling them to proper processing temperature and secondly, it generates useful steam from this waste heat.

Boiler construction features steel tubes covered with cast iron extended surface elements. This design permits concentration of large surface areas in small spaces and provides the necessary protection against corrosion. Ability to vary the amount of heat absorbing surface on tube sections gives the flexibility for optimum handling of the different gas conditions found in any one installation.

SO_2 waste heat boilers can be easily installed in existing sulfite pulp digesters, are low in maintenance and show a high return on the original investment—a unit producing 10,000 lb. of steam per hour will pay for itself within twelve months.

●

FOSTER WHEELER CORPORATION

165 BROADWAY, NEW YORK 6, N. Y.

FOSTER WHEELER

Type of fibrous material, region and state	1943	1942
California	362,356	340,916
Waste paper, United States total	6,367,854	5,494,959
New England States, total	606,928	505,229
Maine	17,404	7,190
New Hampshire	24,379	24,619
Vermont	12,177	10,079
Massachusetts	308,164	255,363
Rhode Island and Connecticut	244,804	207,978
Middle Atlantic States, total	1,804,273	1,534,546
New York	606,158	536,813
New Jersey	674,778	618,568
Pennsylvania	523,337	379,165
East North Central States, total	2,619,194	2,292,053
Ohio	744,982	578,609
Indiana	238,996	154,732
Illinois	538,590	685,474
Michigan	846,023	710,761
Wisconsin	250,603	162,477
West North Central and Mountain States, (Minnesota, Iowa, Missouri, Kansas and Colorado)	305,762	269,129
South Atlantic States, total	389,389	284,942
Delaware, Maryland and District of Columbia	126,052	103,650
Virginia and West Virginia	138,655	103,823
North and South Carolina	96,196	54,993
Georgia and Florida	28,486	22,476
East South Central States, (Tennessee and Alabama)	78,856	64,952
West South Central States, (Louisiana, Arkansas and Texas)	164,778	179,494
Pacific States, total	398,674	364,614
Washington and Oregon	73,244	65,145
California	325,430	299,469
Rags, United States total	425,910	480,614
New England States, total	79,211	73,532
Maine and New Hampshire	2,786	1,350
Massachusets, Rhode Island and Connecticut	76,425	72,182
Middle Atlantic States, total	128,398	161,509
New York	48,679	74,445
New Jersey	54,513	62,039
Pennsylvania	25,206	25,025
East and West North Central States, total	140,825	161,562
Ohio and Indiana	37,994	44,257
Illinois	60,989	75,901
Michigan	5,368	5,127
Wisconsin, Minnesota and Missouri	36,474	36,277
South Atlantic States, (Delaware, Maryland, District of Columbia, Virginia and Georgia)	36,957	38,361
East and West South Central States, (Tennessee and Louisiana)	12,576	15,860
Pacific States, (Washington and California)	27,943	29,790
Straw, United States total, (New Hampshire, Massachusetts, New York, New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Michigan, Minnesota, Iowa, Kansas and California)	488,266	516,087
Manila fibre, United States total	12,921	28,205
New England States, (Maine, New Hampshire, Massachusetts and Connecticut	2,699	7,517
Middle Atlantic States, (New York, New Jersey and Pennsylvania)	6,288	10,279
East North Central and West North Central States, (Ohio, Illinois and Iowa)	1,549	5,667
All other states, (West Virginia, North Carolina, Louisiana and California)	2,385	4,742
Other fibres, United States total	269,171	300,045
New England States, total	22,096	26,893
Maine and New Hampshire	2,909	4,539
Vermont and Massachusetts	18,078	21,257
Rhode Island and Connecticut	1,109	1,097
Middle Atlantic States, total	31,865	37,021
New York and Pennsylvania	10,683	15,785
New Jersey	21,182	21,236
East North Central States, total	25,606	29,485
Ohio and Indiana	17,038	13,963
Illinois, Michigan and Wisconsin	8,568	15,522
All other states, (Minnesota, Iowa, Missouri, Delaware, District of Columbia, Virginia, West Virginia, North Carolina, Tennessee, Louisiana, Texas, Washington and California)	189,604	206,646

[1] Revised in accordance with the corrected reports of three mills.

[2] Data on the consumption of wood pulp have been revised to show separately information on "Defibrated, exploded, Asplund fibre and similar grades" of pulp. This classification covers pulp manufactured by such recently developed pulping processes as wet refining, steam explosion and dry pressing in hammer mills. The pulps produced by these processes are used in the manufacture of high strength building papers and wall board. Data for these types of pulp were previously included in "Groundwood" and "Semi-chemical, off-quality, screenings and miscellaneous" pulps, and revised data for earlier years are not available on a state basis, although national totals are available for 1940 and 1941 in "Facts for Industries" Series 24-3-1. However, these processes are recent developments in the field of pulp manufacture, and it is believed that the production of these types of pulp represented a much smaller proportion of all pulp produced in the earlier years than has been the case since 1940.

Stresses Fire Prevention Week

Kimberly-Clark Corporation, Neenah, Wis., at whose various mills fire prevention has become a matter of routine, stressed Fire Prevention Week by distributing between 15,000 and 16,000 pieces of fire prevention literature among its employes last week. Fire drills by the various plant fire brigades, were other features of the program.

Discuss Public Relations

The Post War Planning Committees of the National Paper Trade Association held a special meeting on October 5 at the Hotel Blackstone, Chicago, Ill. George S. Clark, vice-chairman presided. John L. Richey, secretary of the committee reported that the plans laid out with the general staff of the Army Service Forces had been delayed for several reasons, principally due to the fact that Congress had recently passed legislation setting up a three man surplus war property board which has not yet been named by the President, hence further regulations governing the subject were lacking until this action is taken up, but that the matter would be followed quickly as soon as this board was appointed and qualified and new regulations set up.

It was also reported that the executive committee of the association had given its approval for exploring the advisability of setting up a program on public relations or sales promotion jointly with the other manufacturing and converting divisions of the industry interested in promoting the normal use of wrapping supplies after the end of the European war, and for setting up a national program of education for paper salesmen.

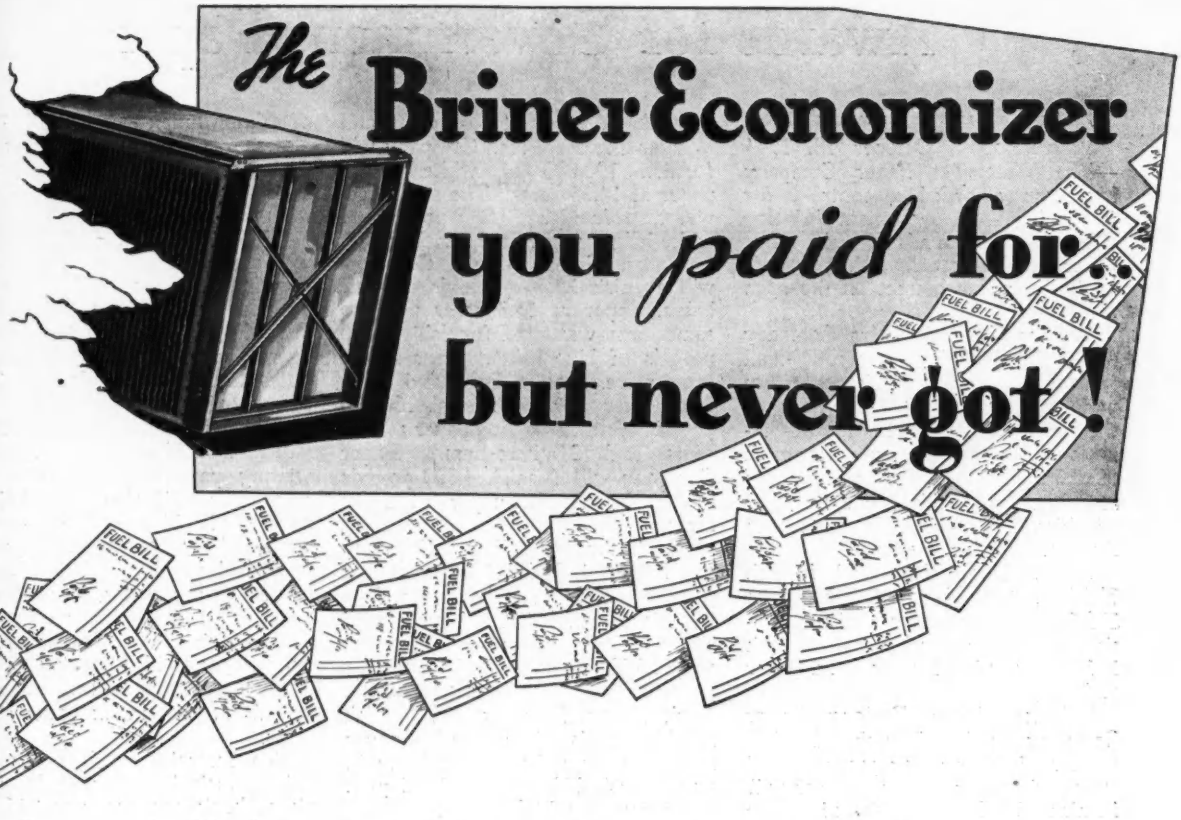
At a joint meeting of the board of directors and the special activities committee of the Paper and Twine Association, it was decided that the secretary be instructed to communicate with the presidents and secretaries of each of the divisional manufacturing and converting associations and the National Paper Trade Association, inviting them to cooperate in such a program. It was suggested that such divisions of the industry be invited as the National Paper Trade Association, Kraft Manufacturers Association, Paper Bag Institute, Tissue Association, Sulphite Association, The Gummed Industries Association and the Box Manufacturers Association.

Discusses Electrical Applications

The Kalamazoo Valley Section of the Technical Association of the Pulp and Paper Industry met at the Columbia Hotel, Kalamazoo, Mich., on October 5. About 35 attended. D. B. Gearhart of the General Electric Company spoke on "New Electrical Applications in the Paper Industry" and showed sound films describing the recording spectrophotometer and the operation of television transmitting apparatus. There was a general discussion of electronic devices.

The next meeting will be held in Kalamazoo on November 2 when L. B. Miller of the W. H. & L. D. Betz Company and Chairman of the TAPPI Water Committee will speak on "The Physical and Chemical Properties of Raw Water for Pulp, Paper and Paperboard Use."

Those present included: Ken Adams, Ray L. Barton, Ralph S. Clark, A. W. Cole, Wm. G. Curry, G. F. Des Autels, Jack Dickson, F. D. Elliott, Paul H. Feiker, Leo E. Fitzgerald, B. E. Freeman, S. R. Fuiur, David B. Gearhart, R. C. Germanson, F. R. Hamilton, W. F. Hathaway, J. A. Heenan, C. P. Kirchen, W. A. Kirkpatrick, L. H. La Liberte, Merritt Laurence, Frank Libby, R. T. Mashburn, R. R. Milroy, Al. Perlick, R. C. Ruffer, C. C. Schneider, A. L. Sherwood, Hugh Smith, H. L. Vanderberg, Joe Waber, Frank Whittington, Merle R. Wilkins, James A. Wise.



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Make the ROSS-BRINER ECONOMIZER a "must" in your post-war plans.

Be among the first to secure one when they can again be installed. Join with the scores of other progressive mills that cut their steam costs by operating ROSS-BRINER ECONOMIZERS to heat water or air or both — entirely with heat units reclaimed from waste vapor.

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Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, October 18, 1944 —The Watervliet Paper Company has been awarded a contract for furnishing the Government Printing Office 480,000 pounds of white offset paper at 7.23 cents. Other awards made for paper bought on the open market:

Walker Goulard Plehn Company to furnish 55,620 pounds of V-mail writing at 7.4 cents and the same firm will also furnish 51,706 pounds of the same at the same price. International Paper Company will furnish 50,000 pounds of white writing paper at 7.86 cents and the same company will also furnish 200,000 pounds of the same at the same price.

Barton Duer Koch will furnish 13.000 sheets of railroad board at $78.65 per M sheets and the Riverside Paper Corporation will furnish 146,000 pounds of white bond paper at 9.354 cents.

Wilcox Walter Furlong Paper Company will furnish 200,000 pounds of white index paper at 7.77 cents and Barton Duer and Koch will furnish 640,000 pounds of white writing paper at 8.83 cents. Cuneo Press Inc. will furnish 108,450 of white book paper at 6.89 cents and Walker Goulard Plehn Company will furnish 100,000 of white ledger paper at 14.55 cents. The same firm will also furnish 50,000 pounds of white ledger paper at the same price.

Walker Goulard Plehn Company will furnish 22,400 pounds of buff ledger paper at 15.3 cents and the same firm will also furnish 13,440 pounds of blue ledger paper at the same price. Barton Duer and Koch Paper Company will furnish 100,000 pounds of white writing paper at 7.85 cents and Mathers-Lamm Paper Company will furnish 4,800 pounds of white parrafin paper at 15.48 cents.

R. P. Andrews Paper Company will furnish 149,000 of white writing paper at 6.99 cents and the same firm will also furnish 168,792 pounds of white writing paper at 7.27 cents and 106,000 pounds of white writing paper at 7.47 cents. Barton Duer & Koch Paper Company will furnish 52,500 pounds of buff index paper at 14.32 cents and the same firm will also furnish 200,000 pounds of pink index paper at 14.97 cents.

Barton Duer and Koch Paper Company will furnish 20,000 pounds of salmon index paper at 14.32 cents and the same firm will also furnish 43,100 pounds of yellow index paper at 14.97 cents and 43,100 pounds of salmon index paper at 14.97 cents.

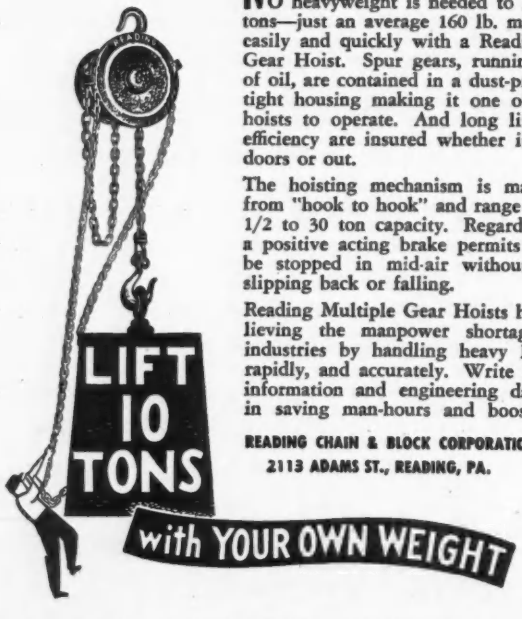
Walker Goulard Plehn Company will furnish 2,400 pounds of white parchment paper at $447.60 cents and Cauthorne Paper Company will furnish 44,250 pounds of blue mimeograph paper at 8.25 cents. Mead Sales Company will furnish 87,000 pounds of book paper at 7.13 cents and Frank Parsons Paper Company will furnish 135,700 pounds of white writing paper at 5.75 cents. The same firm will also furnish 27,960 pounds of white book paper at 7.82 cents and the Zellerbach Paper Company will furnish 70,000 pounds of white writing paper at 8.203 cents. Barton Duer & Koch Paper Company will furnish 100,000 pounds of white bond paper at 13.58 cents and Dill & Collins Inc., will furnish 50.000 pounds of buff index paper at 8.25 cents.

The Central Ohio Paper Company will furnish 200,000 pounds of telephone book newspaper at 6.15 cents and the Whitaker Paper Company will furnish 95,000 pounds of white CW writing paper at 6.95 cents. The Champion Paper and Fiber Company will furnish 98,000 pounds of white CW writing paper at 7.35 cents and the same firm will also furnish 200,000 pounds of white CW writing paper at 6.95 cents.

Stanford Paper Company will furnish 220,000 pounds of white CW writing paper at 7.05 cents and the North American Pulp and Paper Corporation will furnish 80,860 pounds of white manifold paper at 10 cents. Bermingham & Prosser Company will furnish 50,000 pounds of yellow CW writing paper at 7.95 cents and the same firm will furnish 200,000 pounds of white writing paper at 7.31 cents. Paper Supply Company will furnish 13,400 pounds of antique book paper at $19.80 per cwt. and the Consolidated Paper Company will furnish 17,500 pounds of binder board at 5.87 cents.

Central Fiber Products Company will furnish 60,000 pounds of newsboard at $1,650 and Parker-Young Company will furnish 100,000 pounds of white writing paper at 8.6 cents.

Barton Duer & Koch Paper Company will furnish 2,000 pounds of white mount paper at 28 cents and Bermingham & Prosser will furnish 83,000 pounds of newsprint at $59



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The hoisting mechanism is made of steel from "hook to hook" and range in size from 1/2 to 30 ton capacity. Regardless of load, a positive acting brake permits the load to be stopped in mid-air without danger of slipping back or falling.

Reading Multiple Gear Hoists have been relieving the manpower shortage in many industries by handling heavy loads surely, rapidly, and accurately. Write for complete information and engineering data for help in saving man-hours and boosting output.

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per ton and also 174,000 pounds of same at $58. R. P. Andrews Paper Company will furnish 100,000 pounds of white index paper at 7.61 cents and the same firm will also furnish 100,000 pounds of white writing paper at 7.56 cents. Andrews Company will also furnish 460,00 pounds of white writing paper at $34.776; 50,000 pounds same at $3,780; 50,000 pounds same at $3,485; and 53,000 pounds same at $3,535.70 cents.

Quarter Century Club Dines

[FROM OUR REGULAR CORRESPONDENT]

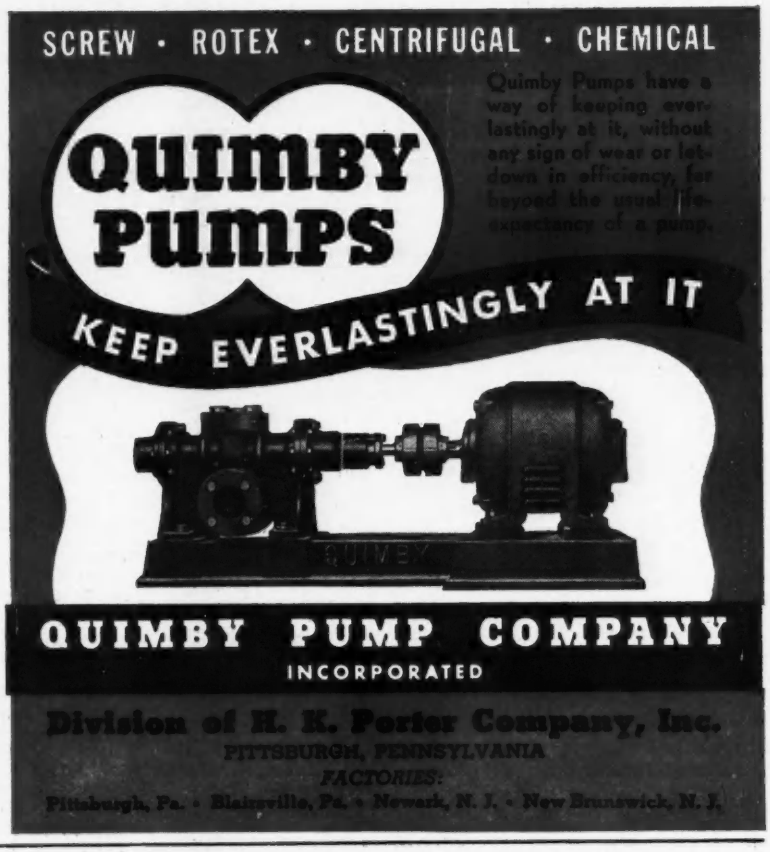
PHILADELPHIA, Pa., October 16, 1944—The first annual dinner of the Paper Manufacturers Company Quarter Century Club was held on Tuesday evening, September 19, 1944. The seventeen active members (thirteen men and four women) enjoyed a gala evening. Their length of service with the company ranges from twenty-five to forty years. Two out-of-town salesmen and club members, Mr. Galloway and Mr. Bernsau, made the trip to the party from Wilmington, Del. and Reading, Pa. respectively. They were welcome guests indeed.

Cocktails were served before dinner, and corsages given to the women. Each man received a carnation boutonniere. A highlight of the evening was the presentation to each member of a $25.00 War Bond in recognition and appreciation of their long association with the company.

Miss Nellie M. Glynn, former secretary of the company was the guest of honor. The occasion was marked by a note of sadness, since Miss Glynn retired five days later from the active employ of the company, after 39 years of service. As expressed by the toastmaster, "she herself may leave us, but her spirit and good nature will prevail forever."

Vincent A. Dirvin, recently elected secretary of the company, acted as toastmaster and after dinner he called on the O'Neill boys—Frank and Lou, for a few words of congratulations to the Quarter Century Club employees. Vincent Dirvin provided one of the entertaining features of the evening when he read a poem of his own creation about each one of the members of the group. Mr. Dirvin's poetic comments were extremely witty and were thoroughly enjoyed by the respective club members. After dinner, sound movies provided a fitting climax to a delightful evening.

The Quarter Century Club members enthusiastically accepted the company's invitation to attend a similar dinner to be given each year.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Demand Exceed Supply

INDIANAPOLIS, Ind., October 16, 1944—Little improvement was seen last week in the amount of paper available in the local market. Demand continued to be much more than supply and there is nothing to indicate any change during the remainder of the year. The probability now that the war in Europe may last until sometime next year has made it evident that the local paper trade will have to get along on its present allotments and there is no evidence that they will be increased, while there might be some reductions in various lines.

Demand for most grades of paper is being met, if possible, but the backlog of orders is extremely large. In many instances where the customer wants some particular item and it can not be secured, the paper trade has been able to find some substitute which, while not what wanted, is suitable for the job. And there has been a minimum of complaint on the part of the customer, who realizes at least to some extent what the paper man is up against.

Bag and wrapping paper demand was increased last week with persons coming home from vacations and the holiday season drawing near. Retail store demand was very heavy, much of the buying being done for delivery nearer the holiday time. Newsprint, while strictly rationed, moved well, with publishers taking their quotas and governing their pages accordingly.

To Survey Printers' Needs

WASHINGTON, D. C., October 17, 1944—Thirty-eight thousand commercial printers of the nation will be surveyed by the War Production Board to learn their consumption and end use of paper in their base period, 1941, WPB said today.

Questionnaire forms have been mailed to the printers by the Bureau of Census. WPB officials are urging the printers to fill out the questionnaire and return it promptly.

The questionnaire seeks to learn the following facts required to facilitate equitable distribution of paper for the fourth quarter of 1944:

Amount of paper consumed in commercial printing under the Commercial Printing Order L-241 during the 1941 base period and nature of printed matter produced.

Similar surveys, completed in other segments of the printing and publishing industry, have been of great value in the accurate forecasting of their paper requirements, WPB officials said.

QUEBEC PLANS A GREAT FOREST EXPLOITATION

(Continued from page 13)

paper industry; and, as regards Quebec province, also by a conflict between both of these and the National Catholic Labor Syndicates which, up till recently, have been a powerful force in union labor in the province. Temporarily either one or the other of the two powerful international unions appear to have gained the upper hand in the industry in different districts, but the Catholic Labor Syndicates, which have the support of the clergy in what are almost exclusively Catholic centres of industry, are by no means admitting defeat.

This is the situation which was referred to at last week's meeting of the International Brotherhood of Pulp, Sulphite, and Paper Mill Workers (A.F.L.) in Toronto, where a resolution was unanimously approved urging that a boycott be organized "as soon as possible" by the Federation of Railway Workers, Telegraph Operators, Printing Trades and others "against the companies and labor organizations whose sole aim is the destruction of organized labor 'in the form of our international unions' in Quebec.

This motion was passed by Local 398, of Riverbend, Que., where newsprint and sulphite mills of Price Brothers and Co. are situated, in which mills most serious strikes through jurisdictional disputes of unions have already occurred. According to the A.F.L. delegates from Riverbend, the movement against the international unions is so serious that it has become "anti-social," L. P. Lacroix, the seventh vice-president of the union, saying that a campaign of "lies and terrorism" against organizers of the international unions was being pushed by the National Catholic Labor Syndicates in Quebec, and that in some sections collections of $5 per family were being taken up to combat international unions.

New Peak Value in Production of Newsprint

The Dominion Bureau of Statistics has just issued its annual report covering the operations of the pulp and paper industry for the past year. This shows that in 1943 the gross value of the products of the industry reached $345,653,000, as compared with $336,697,000 in 1942. The 1943 valuation, a new high record for the industry, marked the fourth successive year in which new highs were posted. The increase over the 1939 total was 71.8%.

One hundred and six mills were operated in 1943, of which 50 made pulp and paper, 28 made pulp only and 28 made paper only. Capital investment was $667,458,000, an increase of 1.8% over 1942. Salary and wage disbursements amounted to $71,199,000 to 37,020 persons, as compared with $69,656,000 to 38,002 employees in 1942.

The 78 mills manufacturing pulp produced 5,272,820 tons, valued at $194,434,202, as compared with 5,606,461 tons, valued at $192,145,062, a decrease in quantity of 6% but an increase in value of 1.2% over the previous year. The 78 mills making paper in 1943 produced 3,966,344 tons of paper and other products, valued at $235,362,958, as compared with 4,321,767 tons with a value of $230,269,512, a decrease of 6.3% in quantity, but an increase of 2.2% in value.

Newsprint made up 76.8% of the total reported tonnage of paper manufactured in 1943. Newsprint produced amounted to 3,046,422 tons, with a value of $154,046,422, as compared with 3,257,180 tons, valued at $147,074,109, a decrease of 6.5% in tonnage, but an increase in value of 4.9%.

Reports on Chlorine Allocation

WASHINGTON, D. C., October 11, 1944—"Chlorine allocations should be continued for at least one month after 'Victory in Europe' Day," the Chlorine Alkali Industry Advisory Committee recommended at a recent meeting, the War Production Board reported today.

To keep production and distribution in balance, WPB has prepared new instructions concerning the quarterly shipments of chlorine by industry. These instructions, approved by the committee, follow:

"During the fourth quarter of 1944, the following conditions will prevail with respect to the delivery of chlorine:

"1. In any one month of the fourth quarter of 1944, no consumer shall receive at any one consuming point more than one-third of the amount of chlorine allocated to him in that quarter for use at that consuming point without special authorization from WPB.

"2. If one-third of the amount of chlorine allocated to any one consuming point cannot be fully shipped in standard containers (tank cars), the delivery of that amount can be exceeded by enough chlorine to permit shipment of a full container (tank car) without special authorization.

"3. The total amount of chlorine shipped during the quarter to any one consuming point shall not exceed the total amount allocated to that point without special authorization.

"4. Consumers of chlorine for sewage treatment and purification shall be exempted from this ruling."

Chlorine allocations for the fourth quarter amounted to 338,554 tons, WPB officials told the committee. The allocation for the paper industry is 43,196 tons.

To Continue Conservation of Paper

Conservation of critical war materials such as paper, leather, and the components necessary for military equipment will be continued aggressively despite dissolution of the Conservation Division on November 2, the War Production Board announced last week.

The paper conservation campaign, which expects to reach its goal of 1,000,000 tons by December 31, is now running at top speed with hundreds of communities joining in the "Paper Holiday" program, WPB said. This program is based upon a period of time, set by each community, during which retail merchants wrap packages only for protection.

"Paper is one of our most critical materials and in order to avert a still more critical shortage, especially in paperboard, efforts must be continued and expanded in the conservation and salvage of paper," Howard Coonley, director of WPB's Conservation Division, said.

Both the conservation and salvage of paper will be directed after November 2 by W. Thomas Hoyt, now deputy director of the Salvage Division. Mr. Hoyt will become a member of the staff of Harold Boeschenstein, deputy vice chairman of operations for WPB.

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MERRITTON, ONT.

J. M. McAlear Heads Paper Div.

The Mason-Neilan Regulator Company, Boston, Mass., has announced the appointment of James M. McAlear to head-up its paper and pulp mill division. Mr. McAlear is well-known to the paper industry

JAMES M. MCALEAR

throughout the Middle West, having specialized in the application of Masoneilan Controls to pulp production and paper making during five years at the company's Chicago office. After October 1, 1944 his headquarters will be at the home office in Boston.

Reports on Pulpwood Conference

A report of a pulpwood production conference held at the forestry camp of the University of Maine on September 17-22, 1944, has been issued by the American Paper and Pulp Association. The conference was sponsored by the American Pulpwood Association and the American Paper and Pulp Association, with the United States Forest Service and the Training Within Industry Branch of the War Manpower Commission cooperating. The report states that it was thought it would be possible by means of conferences, demonstrations, discussions and actual instruction, to enable these men to arrive at practical conclusions in relation to the need for training, work planning and the application of motorized and power equipment in woods operation. These assumptions proved to be correct and the success of the conference exceeded in every way the expectations of those who were responsible for organizing and carrying it out.

It is expected that this may be forerunner of similar conferences in various areas and the continuation of the program.

Dennison-Petri Nuptials

[FROM OUR REGULAR CORRESPONDENT]

FRAMINGHAM, Mass., October 16, 1944—Henry S. Dennison, president of the Dennison Manufacturing Company, and Mrs. Gertrude Bement Petri, of Brookline, Mass., were quietly married Wednesday afternoon, October 11, at Mr. Dennison's home on Juniper Hill, Framingham Centre, by Rev. George F. Patterson, minister of the First Unitarian Church, Framingham.

Porter Opens West Coast Office

To better serve the West Coast territory, H. K. Porter Company, Inc., of Pittsburgh, Pa., and subsidiaries has opened offices at 849 Petroleum Building, Los Angeles 15, Cal., W. W. Calihan, director of sales for Porter and subsidiaries announces. Plans are also in the making for San Francisco offices.

Harold A. Hintz has been appointed district manager for the territory. He is headquartered in the Los Angeles office, where the company is making available sales-engineering service for the lines of Porter & Porter Process Div.; Mt. Vernon Car Manufacturing Company; Devine Manufacturing Company; Quimby Pump Company; Fort Pitt Steel Casting Company; and Porter-Blairsville Company.

Porter "Better Built" products handled for the West Coast through the new office include locomotives, freight cars, process equipment for oil, chemical and other industries, pumps, electric steel castings and heavy forgings.

Mr. Hintz, who attended University of Chicago in mechanical engineering, began work with Shattuck & Hussey, architects, and Packard Motors Company. In 1925 he established an industrial property management firm, Harold Hintz Company, in Los Angeles, performing his service for many California concerns. Recently he has represented Axelson Manufacturing Company, Los Angeles, Cal., as field sales engineer.

Paper Stocks Active

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., October 16, 1944—Out of the 10 most active industrials on the Montreal Exchange and Curb Market in the past week, six were pulp and paper issues, namely St. Lawrence Corporation pfd., Price Bros. & Co., Donnacona, Brown Corporation, Consolidated Paper, and St. Lawrence Corporation common.

The paper average, maintained by the statistical department of the Montreal Stock Exchange and Curb Market, touched a new high for several years —in 1937 it touched 374.69—by closing at 174.22, compared with a previous high for 1944 of 174.15, a gain of 8.54 for the week and 58.00 when compared with a level of 116.0 established at the same date a year ago. The lowest point touched by the 10 papers average this year was 116.68, while in 1943 the high for the average was 129.86 and the lowest 74.07.

Fire Damages Bay Warehouse

[FROM OUR REGULAR CORRESPONDENT]

CHELSEA, Mass., October 16, 1944—Fire recently destroyed a rag warehouse owned by Stein & Co., at 85-87 Summer street, and damaged the backs of two other rag shops at 196 and 200 Third street.

A representative of the company estimated the loss of the one-story, metal-sheathed wooden warehouse at $3200, but could make no immediate estimate of the value of its contents. Damage to the backs of the two adjoining shops on the adjacent street was estimated at $300.

Gordon E. Emerson Convalescing

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., October 16, 1944—Gordon E. Emerson, treasurer of E. Butterworth & Company, Inc., paper stock dealers, is recovering from a major operation at the Baptist Hospital of New England, Brookline, Mass.

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EFFECTIVE applications of Monsanto Santobrite, to control microorganisms that plague paper making, can be made easily by following a few simple directions.

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FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending October 14, 1944

STOCKS

	High	Low	Last
A. P. W.	4⅛	3⅞	3⅞
Armstrong Cork Co.	45¾	45	45¼
Celotex Corp.	13⅞	13⅜	13¾
Celotex Corp., pf.	18¾	18½	18½
Certain-Teed Products Corp.	6⅞	6⅝	6⅝
Certain-Teed Products Corp. pf.	114½	113½	113¾
Champion Paper & Fibre Co.	29⅜	27¾	29⅜
Champion Paper & Fibre Co., pf.	113	112¾	112¾
Congoleum Nairn Co.	27	26⅛	26¼
Container Corp. of America	27½	26⅝	27¼
Continental-Diamond Fibre Co.	11⅛	10¾	11
Crown-Zellerbach Co.	19¼	18⅞	19
Crown-Zellerbach Co., pf.	102	101⅞	102
Dixie Cup Co.	18⅞	18¼	18½
Dixie Cup Co.,—A.	47½	47	47½
Flintkote Co.	23⅜	22⅜	22⅞
Flintkote Co., pf.	109½	109½	109½
Robert Gair	4¾	4⅝	4¾
Robert Gair, pf.	15¾	15½	15⅝
International Paper Co.	19½	18⅝	19¼
International Paper Co., pf.	85½	84⅞	85½
Johns-Manville Corp.	100¾	99⅞	100¼
Johns-Manville Corp., pf.	...	...	...
Kimberly-Clark Corp.	40¾	40½	40½
MacAndrews & Forbes	29⅞	29½	29⅞
MacAndrews & Forbes, pf.	...	...	...
Masonite Corpn.	44¾	44⅛	44¼
Mead Corp.	11¾	11⅜	11⅜
Mead Corp., pf. A—6%	98½	98½	98½
Mead Corp., pf. B—5½%	94	94	94
National Container Corp.	11½	10½	11
Paraffine Companies, Inc.	56½	54	56½
Paraffine Companies, Inc., pf.	...	...	...
Rayonier, Inc.	17⅛	16⅞	17
Rayonier, Inc., pf.	33¼	32⅞	33¼
Ruberoid Co.	33⅞	33	33¾
Scott Paper Co.	43	43	43
Scott Paper Co., pf.	...	...	...
Sutherland Paper Co.	...	...	...
Union Bag & Paper Corp.	13⅞	13⅛	13⅞
United Paperboard Co.	7	7	7
U. S. Gypsum Co.	80¾	79	79½
U. S. Gypsum Co., pf.	180	180	180
West Virginia Pulp & Paper Co.	24⅛	23½	24¼
West Virginia Pulp & Paper Co., pf.	108¼	107½	107½

BONDS

Abitibi Pulp & Paper Co. 5s '53	87⅛	85⅜	85⅜
Celotex Corp. 3¾s '55	104	104	104
Certain-Teed Products Corp. 5½s '48	102	101½	102
Champion Paper & Fibre Co. 4¾s '50	...	...	...
International Paper Co. 6s '55	108¼	107¾	108¼
International Paper Co. 5s '47	103½	103¼	103¼
Mead Corp. 3½s '53	...	...	...
West Virginia Pulp & Paper Co. 3s '54	...	...	...

New York Curb Exchange

High, Low and Last for Week Ending October 14, 1944

STOCKS

	High	Low	Last
Great Northern Paper Co.	35⅝	35½	35½
Hummel-Ross Fibre Corp.	7⅞	7⅝	7⅞
St. Regis Paper Co.	6	5⅝	6
St. Regis Paper Co., pf.	...	...	...
Taggart Corp.	...	...	...

BONDS

American Writing Paper Co. 6s '61	102	101⅞	102

Pulp Co. May Sell Freehold Limits

It is reported here that Quebec Pulp and Paper Company, Ltd., of Chicoutimi, Que., may sell its freehold limits along the Peribonka river to a producer of specialty papers. A United States company is said to be investigating these limits with a view to purchase.

Quebec Pulp and Paper was placed in bankruptcy in October, 1942, and the Quebec Government claims $1,824,000. The timber limits controlled by the company contain some five million cords it was stated at the time the company was placed in bankruptcy and its groundwood pulp mill at Chicoutimi is of 300 ton per day capacity. Powersites, developed, are good for 36,000 h.p. and the company sells some 6,000 horsepower to the Aluminum Company.

Preferred shares are quoted about 26 to 27 and last transactions took place at 26½, a new high. There are 70,000 preferred shares outstanding and the current market price of the shares gives a valuation of slightly more than $1,800,000.

Urge Continued Pulp Control

Dwight L. Stocker, president of the Association of Pulp Consumers, Inc., has addressed a letter to Harold Boeschenstein, director of the War Production Board's Forest Products Bureau, requesting and urging the continuation of General Preference Order M-93, under which wood pulp is allocated, after V-E Day and until such time as reasonable inventories of wood pulp have been restored and sufficient market wood pulp is available to insure an adequate supply and a free and open market for wood pulp.

Complete text of the letter to Mr. Boeschenstein follows:

"The officers of this association have just completed the holding of a series of Regional Meetings in Holyoke, Mass.; Syracuse, N. Y.; Philadelphia, Pa.; Neenah, Wis.; Kalamazoo, Mich.; and Middletown, Ohio. These meetings were attended by 168 executives of member mills, in nearly all cases the president or a very high official of the firm represented.

"At each meeting the question of continuing General Preference Order M-93, under which wood pulp is allocated, was discussed and a vote taken as to whether, in the opinion of those attending, Order M-93 should be revoked on or shortly after V-E Day or should be continued and the controls gradually relaxed, approximately in reverse of the order they became effective, until such time as reasonable inventories of wood pulp have been restored and sufficient market wood pulp is available to insure an adequate supply and a free and open market for wood pulp.

"The vote at each of the six meetings was unanimous in favor of continuing Order M-93 after V-E Day and gradually releasing the controls as outlined above. During the discussions member after member pointed out that a chaotic condition would result if Order M-93 was abruptly terminated and that, in their opinion, it was of utmost importance that it be continued in force and used to equitably distribute both foreign and domestic wood pulp until the mills were in a position comparable with their situation at the time Order M-93 originally became effective.

"As I believe you know, the members of the Association of Pulp Consumers, Inc. operate 278 paper and paperboard mills, located in twenty-six states and the District of Columbia, which depend on purchased pulp for their continued operations. They produce all types of paper and paperboard, and have a capacity of over 30 per cent of the total paper and paperboard capacity in the United States. During the past year these member mills consumed over 1,350,000 tons of purchased wood pulp, nearly 2,800,000 tons of waste paper, and 93,450 tons of rags. They have willingly and gladly dedicated themselves and their mills to the furnishing of paper and paperboard required for the war effort, and to suddenly and abruptly terminate Order M-93 before these mills, and others using purchased wood pulp, have had an opportunity to rebuild their inventories would place them at a tremendous disadvantage in competing with paper and paperboard mills which produce their own wood pulp.

"It is earnestly requested that Order M-93 be continued, and the controls exercised under it gradually relaxed, until an adequate supply and a free and open market for wood pulp have been reestablished."

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PAPER
TRADE JOURNAL
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Henry J. Berger, Editor

COMING EVENTS IN PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

CHICAGO PROFESSIONAL PAPER GROUP—First Monday of each month except July and August at Chicago, Ill.

PRICE RECONVERSION

Price control has, as a wartime measure to prevent inflation and spread the distribution of goods as widely as practicable, been a center of unending controversy. The Office of Price Administration in carrying out the program under the Stabilizing Act has successfully prevented prices from rising to dangerous levels. While there are numerous disagreements as to the basic levels of prices governmentally maintained, there can be little fault finding about the over-all accomplishment in curbing inflation. An excellent summary of the price situation and what the OPA has achieved is clearly and briefly presented in a memorandum on reconversion pricing issued last week by Chester Bowles, Administrator. Excerpts from this release follow.

Since the spring of 1942, when price control first became effective, the Department of Labor tells us that industrial prices have risen less than 3%. The cost of living, expressed in the individual prices of items purchased by the avearge middle income family, has, according to the same authority risen only about 9% in the same period. The pricing policies which we have followed during the war period have been effective under wartime conditions. But today we look forward to more and more cut backs in war production and the increased production of peacetime goods. During the next ninety days we are hopeful that the war will be brought to a close in Europe. During the next eighteen months or so we are looking forward to victory in the Pacific. The Federal Government has made it clear that industry will be assisted and encouraged to resume manufacture of civilian goods as rapidly as possible. To this end, the War Production Board has announced that it will lift controls over most materials and manufacturing immediately after V-E Day. The War Manpower Commission has stated all manpower controls will be lifted except in relatively few areas where they are essential to continued war production. The only lasting answer to inflation is full production of civilian goods with all possible speed.

For this reason we of the OPA welcome these developments as a major aid in holding prices stable.

In commenting on dangers ahead Mr. Bowles said in part that, by the end of 1944, 100 billion dollars of wartime savings will be waiting in the hands of people who have been unable to buy many of the things they wanted most—a new car, an electric refrigerator, a washing machine, a sewing machine, a new stove, new farm machinery, a new house. The competition for materials will be considerable. To back up this competition the desire for inventories and raw materials are billions of dollars in wartime reverses. But, as I have pointed out, inflationary pressures are only one-half the story. Deflationary pressures, some of them inescapable, some of them potential, are equally dangerous. If reconversion is slow, the national income will be dangerously down while millions of workers are waiting to return to work. The Government has been spending about 70,000,000,000 dollars a year for war materials and construction, and that money has provided good jobs at high wages. Within three months after the defeat of Germany it is estimated that this will be cut to about 40,000,000,000. To a major extent that's money out of our pockets, until we get civilian production going on a comparable scale. But after V-E Day the threat of deflation cannot be ignored.

Declaring that we must resist both inflationary and deflationary forces, Mr. Bowles said that uncertainty about prices is one of the most dangerous. It could lead to a wild speculation or to a drying up of purchasing power. That is why we are determined to do all in our power to hold prices stable during the months ahead. In general, our objectives in setting ceiling prices for these new goods will be the manufacturer's own 1942 prices. This means that any manufacturer who is planning to put new civilian goods on the market at 1942 prices or less knows now that his ceiling price will not be lowered. As soon as production and manpower controls are released, he can proceed at once. Reconversion pricing will not be one of his problems. In industries now under price control, such as paper and pulp, textiles, meat packing, for example, substantial increases in either hourly wages or materials prices, or both, have occurred. In none of these cases, however, has it been necessary to allow price increases anywhere near equivalent to the cost increases. In the paper and pulp industry, average hourly earnings have increased 17.7% since 1941. Material costs have increased 19% during the same period. If these increases had been fully reflected, prices would have to increase by 14.6%. Actually, paper and pulp price increases during this period averaged only 4.2% while industry profits have continued at the 1941 level. There are some companies, however, and perhaps a few industries whose costs have risen so far above their 1942 level as to make full absorption impossible. These will need new prices. They will need them quickly, and we intend to see that they get them.

In outlining some of industry's responsibility for

the future, Mr. Bowles said that, as a practical matter, we cannot go back to the production levels of 1940. The Department of Commerce recently estimated that if in 1946 we were to go back to 1940 total production at 1940 hours of labor, there would be 19,000,000 unemployed. There would be a cut of more than 30% from our present level of production. We who have been close to American industry during the war period believe that industry can successfully meet this test of the future. But I believe we are all aware, both in government and in industry, that in order to reach this goal we must establish and maintain close cooperation among all groups—business, labor, farmers, and government. The basic answer to our economic future, it seems to me, lies in the maximum hourly production on the part of labor; high wage rates, low unit profits and the greatest possible volume on the part of industry; the maintenance of high farm income; and the joint realization of all groups that the prosperity of each depends on the prosperity of the others.

CIO Wins at Waukegan Plant

On October 3 the Paper Workers Organizing Committee-CIO won exclusive bargaining rights for more than 200 production workers at the National Envelope Company division of the U. S. Envelope Company plant in Waukegan, Ill. This was determined by an employee representation election held under the auspices of the National Labor Relations Board. The PWOC-CIO received 156 votes to 23 against.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1944		Corresponding Weeks—1943	
Sept. 2	92.8	Sept. 4	90.7
Sept. 9 (Holiday Sept. 4)	76.8	Sept. 11	74.6
Sept. 16	94.8	Sept. 18	92.8
Sept. 23	93.7	Sept. 25	92.2
Sept. 30	95.2	Oct. 2	91.7
Oct. 7	*96.1*	Oct. 9	90.9

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1943	87.2	88.9	89.5	88.7	91.4	84.8	84.3	91.0	88.3	89.6	89.6	82.0	87.8
1944	89.6	89.6	89.2	88.8	89.7	90.7	81.1	92.5	*80.1*				

COMPARATIVE YEARLY SUMMARIES

	1937	1938	1939	1940	1941	1942	1943	1944
Year to Date	85.7	69.9	80.1	86.2	95.4	92.0	88.2	*89.8*
Year Average	79.8	71.5	83.4	85.6	97.4	90.4	87.8	

*Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1938	56	63	63	60	60	59	59	69	70	73	67	61	64
1939	65	73	76	74	69	73	68	77	82	91	88	77	77
1940	78	75	74	76	82	85	77	79	78	85	83	77	78
1941	81	88	89	89	91	94	92	98	95	99	98	90	92
1942	102	101	101	95	82	72	68	75	76	81	82	77	84
1943	86	88	94	94	96	94	89	96	94	94	93	87	93
1944	90	96	95	96	96	96	85	96	*93*				

Week ending Sept. 2, 1944—97 — Week ending Sept. 23, 1944—96
Week ending Sept. 9, 1944—80 — Week ending Sept. 30, 1944—95
Week ending Sept. 16, 1944—97 — Week ending Oct. 7, 1944—*96*

†Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

To Plant Monterey Pine in Australia

WASHINGTON, D. C., October 11, 1944 — The planting of large areas of Monterey pine in the southern and possibly northern states of Australia is one of the major post-war projects planned for by the pulp and paper industry there, according to a report to the Department of Commerce.

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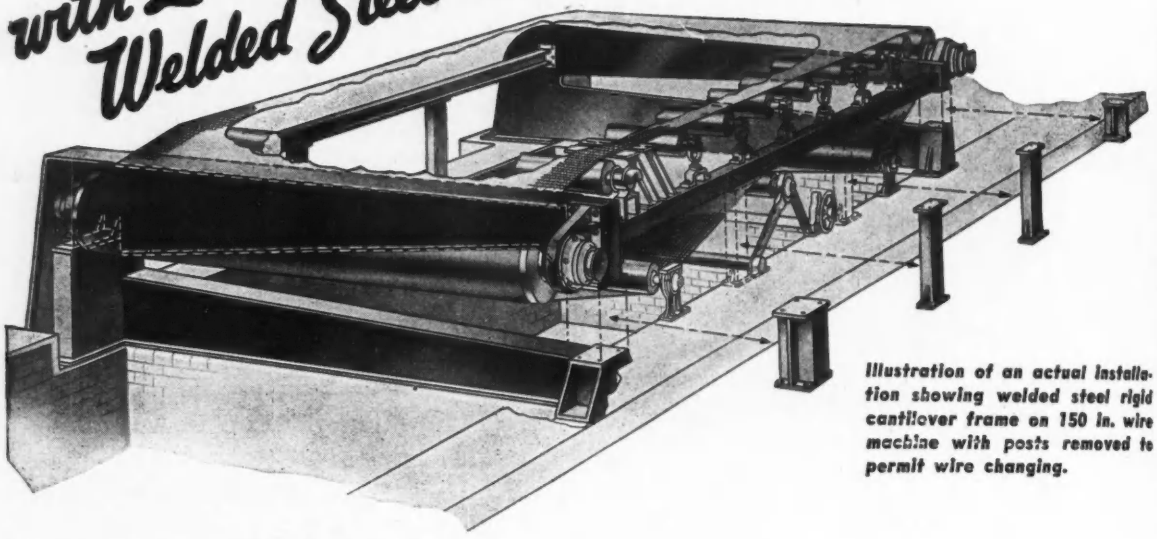

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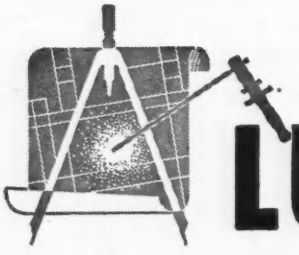

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Sodium Peroxide Bleaching of Mechanical Pulps*

Effect of Varying the Bleaching Conditions

By J. S. Reichert [1], D. J. Campbell [1], and R. A. Secord [1]

Abstract

Investigations are in progress with the objective of determining the conditions under which sodium peroxide bleaching of mechanical pulps should be applied for best results. This paper presents some of the results obtained to date; the investigational work will have to be extended to provide a complete picture. Some of the variables were found to be interrelated; in some instances a change in one variable necessitates a change in one or more other variables.

In the range of 3 to 7% pulp consistency, the brightness increases obtained in the bleaching treatment show a progressive increase with the pulp consistency.

Brightness increases obtained in the bleaching treatment increase with the percentage of sodium peroxide used in the treatment. With 2% sodium peroxide the pulp brightness increases from a starting brightness of 58 to 61 to a bleached brightness of 68 to 71, an increase of approximately 10 points.

Development work on the sodium peroxide "Solozone" process for bleaching mechanical pulps has been limited by wartime conditions that have existed since the process reached a stage where commercially good results were obtainable. A report on the status of this development has been presented *(4)*. The treated pulp shows many qualities and characteristics that make it a useful material for the production of a wide range of papers. A detailed description of the properties of sodium peroxide bleached mechanical pulp and its use in paper manufacture was presented by Beeman *(1)*.

The laboratory work described in this paper was carried out as part of a process development program in parallel with experimental mill operations The need for additional information on different aspects of the process, as indicated by plant trials, influenced the course of the present investigation. The data given do not constitute a complete picture but are given as a status report on a continuing project.

In investigation of the bleaching of groundwood was made by Curran, Schafer and Pew *(3)* who reported better results in bleaching western hemlock groundwood with alkaline solutions of hydrogen peroxide and with sodium peroxide than with neutral or acid peroxide. A procedure for bleaching groundwood pulp was described by Reichert et al. *(5)* in which the pulp was treated with an alkaline peroxide solution at a pH of 10 to 11 in the temperature range of 80 to 120° F. Craig *(2)* described a procedure for bleaching groundwood pulps with alkaline peroxide solutions and afterwards treating with an acid sulphite or sulphurous acid solution.

Procedure

The pulp used in this experimental work was drawn periodically from a freshly ground mill supply and had an average composition of 95% spruce and 5% balsam. The maximum time of storage in the laboratory was 3 days. The pulp was dewatered in the laboratory to a consistency of 15 to 17% and stored in a cool place. Preliminary experiments showed that the dewatering and storage of the pulp did not materially influence the results.

Insofar as possible each series of experiments was carried out with a single mill sample of pulp. Preliminary experiments indicated that under these conditions the results were reproducible within ± 0.5 G.E. brightness units, e.g., when six portions of pulp were bleached at 5% consistency with 1% sodium peroxide, 0.6 sulphuric acid and 5% sodium silicate for 6 hours at 90° F., the final brightnesses were 67.1, 66.8, 66.8. 66.7, 66.6, 66.2. The data on the effect of variations in the pulp are meager and further studies will be required before definite statements can be made. In this work the results obtained in bleaching different mill samples were reproducible within ± 1.5 G.E. brightness units.

For the laboratory bleaching trials a stock solution of sodium peroxide was prepared containing the proper amounts of chemicals, for example, 20 grams sodium peroxide, 50 grams sodium silicate and 17 grams sulphuric acid per liter. These quantities were varied to meet the desired conditions. To bleach with 2% sodium peroxide, 50 ml. of this stock solution was used for a 50-gram sample of moisture-free pulp. A weighed sample of the dewatered pulp equivalent to 50 gram of moisture-free pulp was taken for each run and diluted with the proper amount of water to produce a final mixture with the desired consistency. The diluted slurry and the stock solution were brought

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 14-17, 1944.

[1] Peroxygen Products Division, Electrochemicals Department, E. I. du Pont de Nemours & Co., Inc., Niagara Falls, N. Y.

to a temperature of 90° F. separately; they were then mixed and thoroughly agitated for 2 to 3 minutes with an effective mechanical mixer. The slurry was then stored in a constant temperature cabinet at 90° F., without further agitation, for the specified time. When larger amounts of sodium peroxide were used, the amount of stock solution was increased and the amount of water for diluting the pulp to the desired consistency was decreased accordingly.

At the end of the peroxide bleaching period 1% of sodium bisulphite was added to the slurries and, after adjusting the pH to 7.0 to 7.5 with sulphuric acid, the samples were stored at room temperature for about 4 hours. This bisulphite treatment was substituted for the treatment with sulphite cooking acid used in mill operations. In comparative tests the two treatments were found comparable in effect. After the reducing treatment, the slurry was diluted, and the pH was adjusted to 4.5 by the addition of sulphuric acid. The handsheets were prepared according to standard TAPPI procedure and the brightness readings were made with the G. E. meter on the air-dried sheets. In all cases where percentages are mentioned they are based on the moisture-free pulp, thus 2% sodium peroxide means 2 grams sodium peroxide to 100 grams of moisture-free pulp.

Effect of Pulp Consistency

First studied was the effect of pulp consistency on the brightness obtained in bleaching. The results of this study, presented in Fig. 1, show that with constant amounts of sodium peroxide, higher brightness are obtained at consistencies of 5 to 7% than at 3%. This indicates that there is a commercial advantage in bleaching at the higher consistencies and a consistency of 5% was adopted as a temporary standard for the laboratory work.

Effect of Sodium Peroxide Concentration

To determine whether any advantage could be obtained by adding the sodium peroxide in increments, samples of pulp were given repeated treatments with amounts of sodium peroxide ranging from 0.6% to 5%. In these experiments only the peroxide treatment was repeated; the reducing treatment was used only after the final peroxide treatment. The data presented in Fig. 2 show that the greatest increase takes place with the first treatment, and that the second and third treatments result in progressively smaller

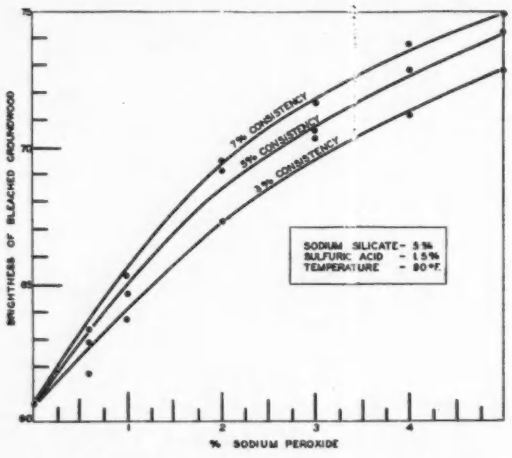

FIG. 1

Brightness Obtained by Bleaching Groundwood at Different Consistencies with Different Percentages of Sodium Peroxide

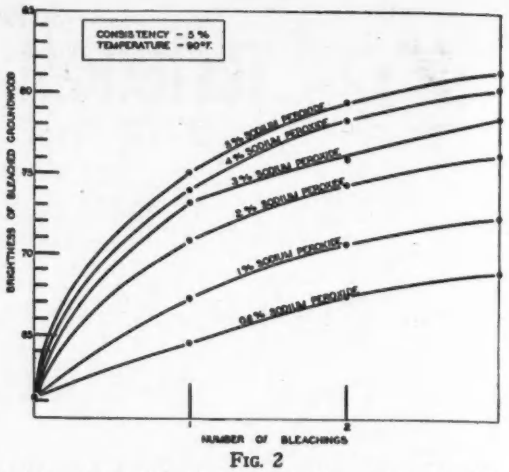

FIG. 2

Brightness Obtained in Repeated Bleachings of Groundwood Pulp with Different Percentages of Sodium Peroxide

increases. When these data are plotted on a different scale as shown in Fig. 3, it becomes evident that with a constant amount of sodium peroxide, the same brightness is obtained when the entire amount is used in one treatment as when it is applied in several consecutive treatments. It also becomes apparent that the brightness increase obtained per pound of sodium peroxide diminishes rapidly with increasing amounts of sodium peroxide. Brightness values as high as 80 have been obtained.

Fig. 4 shows the time required for bleaching and the rate at which bleaching occurs. The brightness increases rapidly during the early stages of the operation and there is a corresponding rapid decrease in the concentrations of alkali and active oxygen. The peak brightness is attained in about 6 hours. This curve which is similar to many others that have been determined, was selected as a typical illustration since the proportions of chemicals used in these experiments correspond more nearly to what was later found to be the optimum.

Effect of Alkali Concentration in the Bleaching Solution

During the course of this investigation it became evident that the alkali concentration is an important factor in the sodium peroxide bleaching process. Preliminary trials showed that solutions of sodium per-

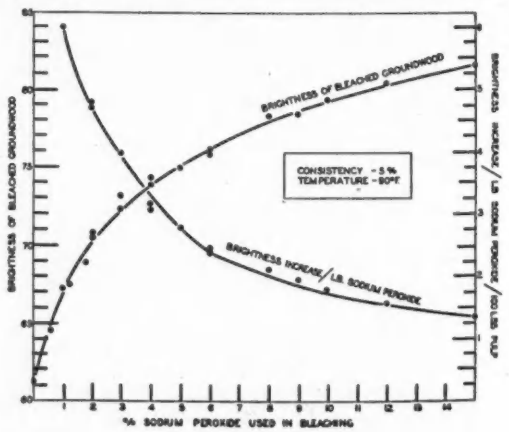
BRIGHTNESS OF BLEACHED GROUNDWOOD
BRIGHTNESS INCREASE/LB. SODIUM PEROXIDE/100 LBS. PULP
BRIGHTNESS OF BLEACHED GROUNDWOOD
CONSISTENCY - 5%
TEMPERATURE - 90°F.
BRIGHTNESS INCREASE/LB. SODIUM PEROXIDE
% SODIUM PEROXIDE USED IN BLEACHING

FIG. 3

Brightness Increase with Increasing Amounts of Sodium Peroxide

oxide buffered with sodium silicate are too alkaline to produce good bleaching results. At the high alkalinities prevailing in these solutions the pulp turns yellowish in color. Studies were therefore made to determine how much alkali should be present for best bleaching results.

Sodium peroxide is an oxidizing agent and also a strong alkali. Sodium silicate, which likewise has an alkaline reaction, is used in many peroxide bleaching operations because it is not only an effective stabilizer in the pH range 9.0 to 11.0, but also has buffering, detergent, and anticorrosion properties. Preliminary experiments were carried out to determine the effect of the silicate concentration. Bleaching trials at 90°F. for 6 hours with 2% sodium peroxide, 1.5% sulphuric acid and 5% silicate gave a peak brightness of 70.2; when the silicate concentration was increased to 15% the same brightness was reached. Therefore, in studying the effect of alkali, the silicate concentration was kept constant at 5%.

A wide range of alkali concentrations was studied by adding either sulphuric acid or caustic soda to the sodium peroxide and sodium silicate solutions. The results are plotted logarithmically and shown in Fig. 5. A rather sharp peak in brightness was obtained with alkali concentration of 0.75% caustic soda which is equivalent to 0.75% sodium peroxide. While the difference between the peak brightness and those obtained with slightly lower amounts of alkali is not great, the peak has been reproduced in several separate series of experiments.

The critical effect of alkali concentration was not realized when the previously presented data were developed. In view of this finding, it is probable that the brightness values obtained in the earlier work would be somewhat higher if the optimum alkalinity had been maintained. However, from the information now available it appears unlikely that the general trend will be changed materially.

In Fig. 6 the data on the effect of alkali concentration have been translated to a scale from which they can be more readily applied to plant work. Again a sharp peak is found and according to the present information the best formula for bleaching mechanical pulp with 2% sodium peroxide, 5% sodium silicate, will contain 1.7% sulphuric acid.

The data presented in this paper indicate that better results are obtained at consistencies of 5 to 7% than

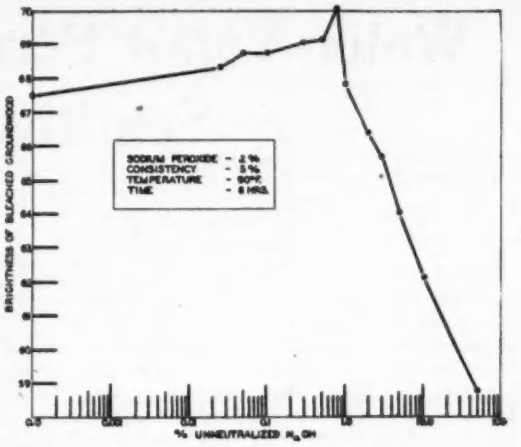

FIG. 5

Effect of Alkali Content of the Bleaching Solution on the Brightness Obtained in Bleaching

at 3%. The brightness increase obtained per pound of sodium peroxide diminishes as the percentage of sodium peroxide used in bleaching is increased; from an economic standpoint the best results are obtained with the lower percentages, e.g., 2% sodium peroxide. The highest brightnesses were obtained in a bleaching time of about 6 hours. The alkali concentration was found to be critical, indicating the importance of carefully measuring the chemicals and water in preparing the peroxide bleaching solution and also of mixing the bleaching solution and the pulp slurry in the proper proportions. Since bleaching proceeds most rapidly during the early stages, it is important that mixing of the bleaching solution with the pulp slurry be rapid and thorough.

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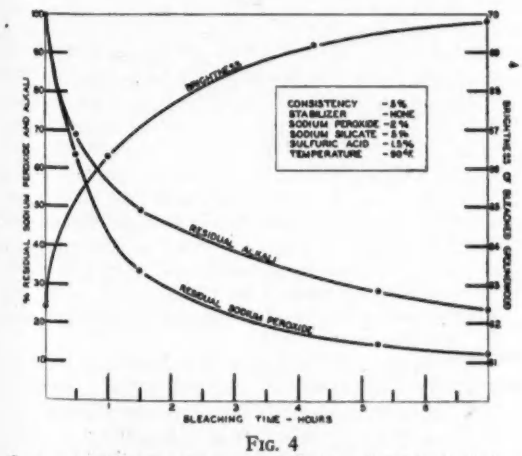

FIG. 4

Increase in Brightness and Decrease in Peroxide and Alkali Concentrations During the Bleaching Cycle

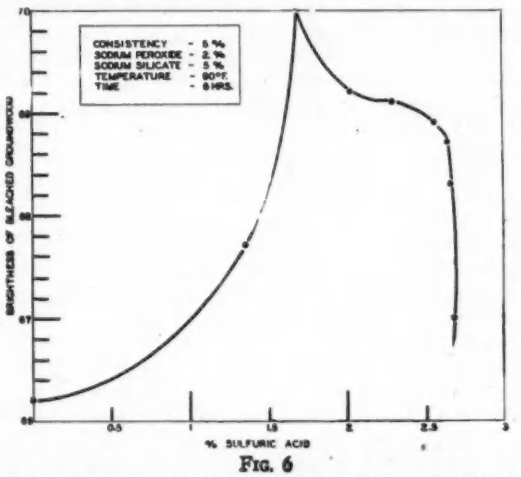
CONSISTENCY - 5 %
SODIUM PEROXIDE - 2 %
SODIUM SILICATE - 5 %
TEMPERATURE - 90°F.
TIME - 6 HRS.
BRIGHTNESS OF BLEACHED GROUNDWOOD
% SULFURIC ACID

FIG. 6

Effect of Varying the Percentage of Sulphuric Acid in the Bleaching Solution on the Brightness Obtained in Bleaching

Water Vapor Permeability of Moisture Sensitive Materials*

By G. J. Brabender[1]

Abstract

A composite sheet material such as moistureproof triple-ply glassine offers particular difficulty in the determination of its water vapor permeability by accelerated methods. The cellulosic matter in such a sheet has a marked tendency to absorb water whereas the two films of microcrystalline wax act as effective barriers to water vapor transfer. This type of construction demands that special attention be paid to the factors of (a) sheet distortion on the test cell, (b) the prolonged period before the sheet reaches equilibrium with the testing conditions and (c) a low rate of change in weight due to true water vapor transfer. Precise control over the atmospheric conditions within the testing cabinet is of definite importance.

Certain advantages in making permeability tests have been found by using a light-weight test cell made as a shaped, seamless metal ring having two open faces. Test assemblies made up with such cells have a low gross weight, a small volume of confined air, occupy a small space in the cabinet, tend to minimize sheet distortion and provide a fairly large test area.

Ordinary rosin is not recommended as a component in the sealing medium for water vapor permeability tests because of its tendency to gain weight under high humidity and temperature conditions. This gain in weight is probably due to both oxidation and moisture absorption. Certain microcrystalline waxes and specially treated rosins have been found to be free from these defects and have other suitable properties for use in sealing compounds.

Progress made in recent years in the development of highly moisture resistant sheet materials has outdistanced the testing methods formerly employed for measuring their water vapor permeability. The use of more drastic test conditions should provide a means for differentiating between materials which have low permeabilities. Moreover, the testing conditions employing high temperatures and humidities should produce permeability values which will furnish an index of the protective properties of such sheets in hot, humid atmospheres.

Measurements of water vapor permeability by accelerated methods have been reported previously *(3, 4)*. These procedures differ from TAPPI Standard T448-m, principally in the use of higher temperatures and higher humidities on the high humidity side of the sheet under test. In general, satisfactory agreement between test values has been obtained, by different investigators, on most of the sheet materials tested. However, certain composite materials have failed to give the desired agreement when tested by the accelerated procedures. The type of materials which have given most difficulty are those which are composed of several different base materials, at least one of which is of the moisture sensitive type, such as paper or regenerated cellulose. Sheets of this kind may be made by coating or laminating different base materials with substances having a high resistance to permeation by water vapor. Asphalts, waxes, lacquers, and plastic compositions have been successfully used as such barriers. Moreover, built-up sheets of this kind have proven to be excellent materials for the protection of food stuffs from moisture and military equipment against corrosion, when subjected to humid conditions.

A triple-ply glassine sheet has been found to be particularly difficult to test by accelerated methods. This composite sheet was made up by laminating three 20-pound (24x36-500) sheets of glassine with two films of microcrystalline wax, giving a final sheet having a basis weight of 72 pounds (24x36—500). Obviously, the cellulosic material of such a composite sheet might be expected to pick up moisture under humid conditions; yet the ultimate rate of water vapor transfer through a sheet having two excellent moisture barriers should be quite low. The exact determination of this transfer rate and factors to be considered in such measurements were studied in this investigation.

Equipment

Humidity Cabinet

A commercial insulated refrigerator cabinet having a capacity of 35 cubic feet was equipped with controls for maintaining a temperature of 100° ± 1° F. and a relative humidity of 90% ± 2%. Temperature was maintained by a 150 watt electric strip heater mounted directly in front of an air circulating fan, drawing air from the upper portion of the cabinet and directing it through an internal duct to the bottom of the cabinet. Temperature regulation was provided by using a Fenwal Model 732 ARC thermoswitch connected in series in the 110 volt a.c. line supplying current to the strip heater. A number of shallow pans of water located in the bottom of the cabinet served as a source of water vapor to maintain relative humidity. The humidity control consisted of a Friez Type H/8 humidistat of the hair actuated type, serving as a switch in the 110 volt line which supplied current to a fan blowing air over the water surface. The temperature and humidity equipment and all its controls and circulating fans were located within the cabinet, thus minimizing any effect of the room atmosphere on the cabinet conditions. Air leakage in the cabinet was eliminated by caulking all joints and openings for electrical connections with a commercial caulking compound.

Three types of temperature and humidity measuring devices were used to determine the conditions within the cabinet (a) wet and dry bulb thermometers, (b) a Friez temperature and humidity recorder, and (c) an electric hygrometer such as that described by Dunmore *(1)* and the Institute of Paper Chemis-

*Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Hotel Commodore, New York, N. Y., February 14-17, 1944.

[1]Member TAPPI; Chemical Engineer, Marathon Paper Mills Co., Rothschild, Wis.

try *(2)*. A double glass door in the cabinet provided a means for taking readings without disturbing conditions in the cabinet.

Test Cells

Test cells constructed as shown in Fig. 1 were used for making the permeability measurements. The supporting ring shown consisted of a section from a paper core fitted snugly into the seamless metal tube. A more recent design consisting entirely of a spun aluminum ring is shown diagrammatically in Fig. 2. The all-metal cell has been found to be much more satisfactory because of its one-piece construction and ease of handling during the operation of sealing the test sheets to the cell.

Procedure

The test cells were assembled by a slight modification of the procedure outlined in TAPPI Standard T448-m. A sheet of the triple-ply glassine was fastened to one opening of the test cell, using a sealing mixture composed of 75% G grade rosin and 25% unbleached beeswax. The standard technique was followed for applying the sealing medium and defining the test area by means of a template. Then the cell was reversed so that the test sheet acted as a bottom closure, about 25 grams of anhydrous magnesium perchlorate was added to fill the opening and a second sheet fastened in place in the same manner as before. Five test cells were assembled and placed with the test sheets in a vertical plane on a wire rack directly in front of a fan inside the high humidity cabinet. A tare cell was made up in exactly the same manner except that the desiccant was omitted from the assembly. A second tare cell was made up omitting the paper core and consisting only of the seamless metal ring, the two test sheets supported on a metal shim fitted inside the ring and the sealing medium. Both of these tare cells were kept in the high humidity cabinet also.

Weighing

Each of the five assemblies containing desiccant were weighed daily against (a) analytical brass weights, (b) the tare cell with the core, and (c) the tare cell without the core. A time interval of 5 to 10 minutes was allowed to elapse before actual weighing was begun. During this period the cells came to equilibrium with the atmospheric conditions in the room in which the weighing was done. The same sequence was followed in weighing the cells each day in order to minimize any error which might arise because of a change in weight of the cells due to the difference in atmospheric environment. The record of the weight

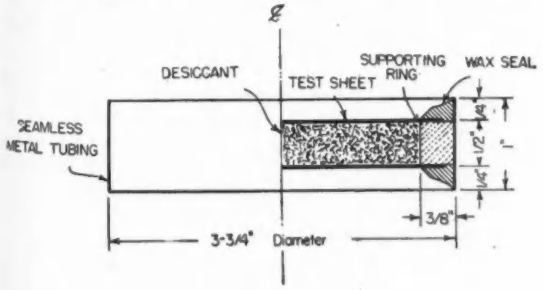

Fig. 1

Two Side Water Vapor Permeability Test Cell (Elevation in Half Section) Employing a Paper Core as a Supporting Ring

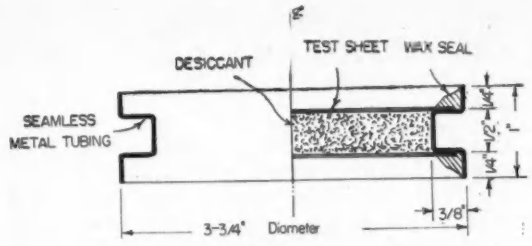

Fig. 2

Two Side Water Vapor Permeability Test Cell (Elevation in Half Section) All Metal, Seamless, Spun from 32 Gage Aluminum

changes as determined by the three methods of weighing is shown graphically in Figs. 3 and 4. Each point on the curves represents the average values of all five cells for the elapsed time involved. Only about one-third of the daily average data are shown on the curves in order to give a clearer picture of the weight change which occurred over the entire testing period. The points which have been omitted would fall directly on the curves as shown.

A continuous record of the relative humidity and temperature within the cabinet was obtained by means of the recording Friez instrument. Frequent readings on the electric hygrometer and the wet and dry bulb thermometers supplemented the recorded data.

Sealing Compounds

Preliminary data on the weight changes of the test cells indicated that the sealing compound might be changing in weight also. This factor was checked by subjecting a certain amount of the sealing compound to the atmospheric conditions within the cabinet and observing its weight change. The amount of sealing compound on the test cells weighed approximately 28 grams and had an exposed surface of about 10 square inches. A similar weight of material was cast on a glass plate over a 10 square inch area. Daily weighings were made on this plate during a period of 22 days in the high humidity cabinet. The plate was removed from this cabinet at that time and placed in another cabinet at 100° F. and a relative humidity of less than 5%. Readings were continued on the cast film for 25 days to determine the effect of these changed conditions on the sealing compound. Similar tests at high temperatures and humidity were made on a sealing composition consisting of 75% dehydrogenated rosin and 25% beeswax and on a 100% microcrystalline wax (Product No. 2305 made by Standard Oil Co. of New York).

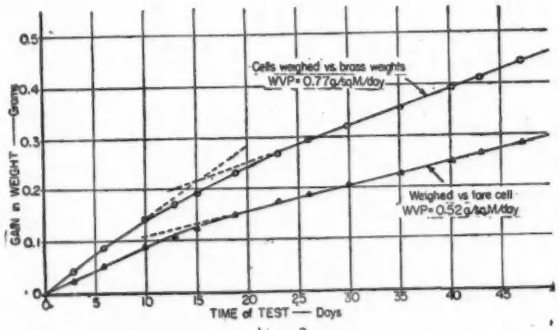

Fig. 3

Water Vapor Permeability of Triple Ply Glassine. Gain in Weight of Five Test Cells Weighed vs. Brass Weights and vs. a Tare Cell Having No Paper Core (Day = 24 hr.)

Discussion of Results

Examination of the curves shown in Figs. 3 and 4 reveal that the rate of change in weight continually decreased for approximately 20 days; thereafter the rate remained fairly constant. However, a different permeability rate is obtained by weighing with brass weights and with the two tares. The permeability determined from the data obtained by weighing using a tare with the core can be dismissed as being incorrect. The explanation for this becomes very apparent when the data shown for the change in weight of a similar tare cell weighed against brass weights as shown in the upper curve of Fig. 4 in considered. It is evident at once that the core used in this tare exerts a definite desiccating action. The magnitude of this effect will undoubtedly decrease as the core picks up moisture. The actual weight of this core was about 20 grams. Its moisture content can be assumed to be about 4% when the assembly was made up. At equilibrium with 90% relative humidity its moisture content would be about 13%. In other words it could gain 1.8 grams in weight because of its change in environment. Obviously, the time required for such a tare to come to equilibrium would be extremely long when it is considered that the cells containing desiccant gained only 0.006 to 0.009 grams per 24 hours. Moreover, the rate of gain by the tare would decrease continually as it picked up more moisture, making it very diffcult to determine the time at which equilibrium was attained. It will be shown later that there are other factors operating which cast further doubt on the reliability of the results obtained by weighings with a tare having a paper core. However, no further consideration of these data need be given on the basis of the foregoing discussion.

Permeability test cells containing desiccant and having a sheet of triple-ply glassine as the test membrane would be expected to gain in weight when subjected to a relative humidity of 90%. This gain should continue until equilibrium is established in the sheet having one face exposed to 90% relative humidity and essentially 0% on the other. Thereafter, the sheet itself should neither gain nor lose weight, but the entire assembly should gain at a uniform rate determined by the actual permeability of the composite sheet material.

A tare cell consisting only of the metal ring, the metal shims, the sealing medium, and the test sheet of triple-ply glassine would gain in weight also when subjected to 90% relative humidity. In this case, the relative humidity of the air confined within the cell would increase until equilibrium was established between the inside and outside of the cell. No change in weight should occur thereafter. On the other hand, the time required for such a cell to attain equilibrium

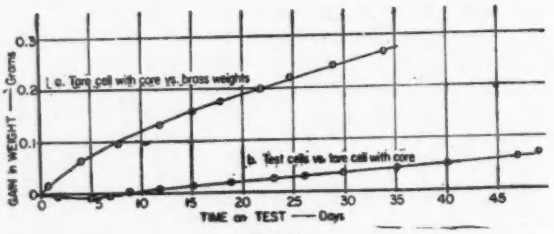

FIG. 4

Effect of Tare Cell Construction on Water Vapor Permeability. (a) Gain in Weight of Tare Cell Fitted with Paper Core and (b) Gain in Weight of Five Test Cells vs. Tare Cell with a Paper Core

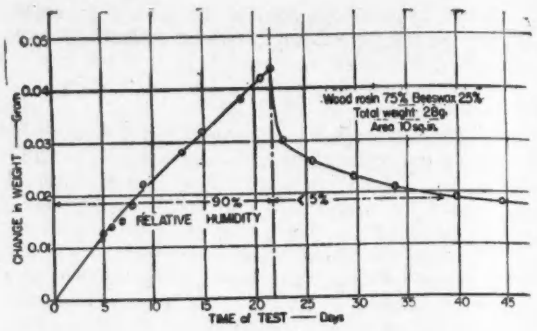

FIG. 5

Absorption of Moisture by Sealing Compound. Change in Weight of Rosin-Wax Sealing Compound when Exposed at 100 Degs. F. and Different Relative Humidities

is not necessarily the same as that required for the test cells containing desiccant.

Calculations based on the actual weight of the test sheets and the equilibrium moisture content of these sheets at the time they were fastened to the test cells and at 90% relative humidity indicate that the cumulative gain in weight of the cells due to moisture gain by the sheet would be about 0.09 gram. It is interesting to find that the difference between the two curves shown in Fig. 3 after 20 days is 0.09 gram, thus indicating that the test sheet had come to equilibrium at that time. After that the rate of gain by the test cells would be expected to be the same whether they were weighed against brass weights or against the tare without the core.

Continued weighings showed that the test cells were gaining at a constant rate but this rate was different when weighings were made against brass weights as compared to those made against the tare. As pointed out in the preceding paragraph there was good evidence to believe that the sheet material itself had attained equilibrium. Therefore the only other material which might be affecting the data was the sealing compound. A test to determine the tendency of the sealing material to gain in weight under the test conditions has already been described. The data obtained are shown graphically in Figs. 5 and 6.

Sealing compositions containing ordinary rosin show a distinct tendency to gain in weight when subjected to an atmosphere of 90% relative humidity and 100° F. The weight gain is undoubtedly due to both oxidation and moisture absorption. Evidence to support such a conclusion is depicted in Fig. 5 where the sealing compound was subjected to a drying atmosphere at 100° F. The loss in weight upon drying approaches a constant value which is considerably less than the total gain by the sealing material. Note that, when a dehydrogenated rosin was substituted for ordinary rosin or when microcrystalline

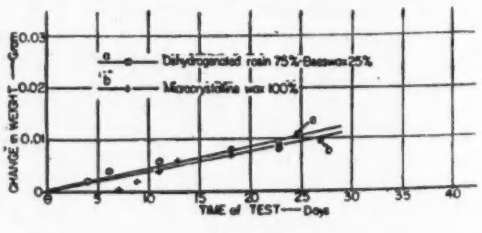

FIG. 6

Absorption of Moisture by Sealing Compound. Change in Weight of Different Sealing Compounds at 100 Degs. F. and 90%. Amount of Compound = 28 g. over 10 sq. in. Area

wax alone (Socony Products No. 2305) was tested, the gain in weight under similar test conditions was negligible. (Fig. 6)

A correction for this gain by the sealing compound was applied to the rate of 0.77 g./sq.M/24 hr. shown for the upper curve on Fig. 3. This correction is equivalent to 0.20 thus giving a corrected value of 0.57 g./sq.M/24 hrs. The latter value is a reasonably good check with the 0.52 g./sq.M/24 hr. found by weighing vs. the tare.

Both of the curves shown in Fig. 3 show a reasonably good straight line section during the first 10 days of the test. After that the rate of gain decreases for another 10 days when the second and lower constant rate period starts. This rate continued for at least 25 days. The intermediate period of decreasing rate might be caused by (a) the gradual attainment of equilibrium by the test sheets or (b) some changes in the test conditions within the cabinet. Data on temperature and humidity in the cabinet support the view that no significant change took place in it. Therefore, it seems reasonable to believe that the triple-ply glassine requires an extended conditioning period before it reaches equilibrium. Moreover, the rate of gain during this preliminary period may appear to be sufficiently constant to be mistaken for a true measure of the water vapor permeability of the sheet. In this instance the final rate was only about half that found during the conditioning period.

Acknowledgement

The author wishes to acknowledge the assistance of D. E. Oatman in the preparation and carrying out of the many permeability tests.

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Treatment of Paper Mill Wastes for Recovery of Fiber, Filler, and Water*

By A. C. Embshoff[1]

Abstract

The application of equipment (Accelator) previously used for water softening and clarification has been made to recover solids from paper mill waste waters. Laboratory, pilot plant, and mill data are presented illustrating the use of such equipment.

The matter of recovering solids in mill waste waters has received a great deal of attention and much work has been done on this problem. This is evidenced by various expedients which have been resorted to, and by certain machines now being marketed for this purpose. The economic desirability of such recovery with the attendant advantages of minimizing the disposal problem and conserving process water require no further comment.

Probably the first approach to the recovery of solids from mill waste water was plain settling, or the attempt to settle, in ordinary tanks or basins. Because of the nature of the solids involved such plain sedimentation is seldom entirely satisfactory. Aside from the naturally slow settling characteristics of the solids with consequent necessity for basins of large size, the entrainment of air or foam, in many instances, results in flotation of a considerable portion of the suspended solids.

Advantage has been taken of this flotation tendency occasioned by entrained or occluded air in equipment now in use in a number of mills. While such "save-alls" are, in general, much more effective than settling tanks or basins, it was felt that better results might be obtained by other means, and possibly at a lesser cost.

In testing of such waste waters it was observed that slow stirring, without the addition of a coagulant in some instances, and with coagulant added in others, effected a material improvement in settling characteristics presumably through the promotion of agglomeration of the suspended solids. Apparently such stirring, under properly controlled conditions, afforded an opportunity for the release of entrained air, with consequent reduction in buoyancy, and also aided in enmeshing the particles with each other to form a more easily separated sludge or slurry.

Laboratory Tests

The laboratory procedure developed, which involved not only slow stirring under controlled conditions but also the recycling of separated solids, gave results as exemplified by the following examples:

(a) Pulp mill machine room waste water containing 1.5 pounds per 1000 gallons suspended solids. Clarified water produced without added coagulant 0.33 pound suspended solids per 1000 gallons; with 1 grain aluminum sulphate 0.08 pound per 1000 gallons.
(b) Pulp mill wet room waste containing 4 pounds suspended solids. Clarified water, using 0.5 grain aluminum sulphate, 0.40 pound per 1000 gallons.
(c) Coated stock machine waste containing 4.5 pounds suspended solids per 1000 gallons. Clarified waste without added coagulant 0.125 pounds; and with 1 grain per gallon aluminum sulphate 0.08 pound per 1000 gallons.
(d) Paperboard mill waste containing 1.67 pounds suspended solids per 1000 gallons. Clarified waste using 5 grains per gallon aluminum sulphate 0.10 pound per 1000 gallons.

These results, and many others, appeared so promising that arrangements were made to operate an "Accelator" pilot plant in a paper plant late in 1941. This equipment was suggested for this application because its design afforded thorough but nondisruptive circulatory agitation, intimate contact of the incoming waste with a circulating slurry of the thickened solids, and clarified water release above the circulating slurry zone. Under these conditions, any self coagulating effect of the waste in question is fully utilized; and, where the use of an added coagulant is indicated, maximum coagulating benefit is obtained.

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 14-17, 1944.
[1] Member TAPPI; Manager, Industrial Div. Infilco Inc., Chicago, Ill.

Pilot Plant

In the operation of this pilot plant both paper machine waste water and main sewer mill wastes were treated *without added coagulant* with the following results:

(a) Paper machine waste water to the settling equipment contained 0.92 to 1.355 pounds suspended solids per 1000 gallons, with an average content of 1.08 pounds. The clarified effluent contained 0.088 to 0.26 pound suspended solids per 1000 gallons with an average of 0.19 pound; an average removal of fiber and filler of 82.5%. On the higher solids waters recoveries on the order of 92 to 93% were obtained; while on the waters of lower solids content, recoveries were on the order of 70 to 80%.

(b) Main mill sewer waste contained 0.45 to 0.74 pound suspended solids per 1000 gallons with an average of 0.62 pound. The clarified effluent contained 0.14 to 0.35 pound with an average of 0.22 pound, thus showing an average recovery of 65%.

In the case of the paper machine waste water, a comparison was made between plain settling and the improved treatment. Without any added coagulant and a retention period of 100 minutes, plain settling resulted in a 58% recovery; while with the special equipment treating the same waste, a 90% recovery was obtained with only a 50 minute over-all retention period.

Further, it was found that the proportion of fiber recovered was greater than that of other solids, 85 to 95% of the fiber in the waste being recovered in the thickened slurry.

Paperboard Mill

With this background of test and pilot plant data, and the experience gained in the operation of many water softening and clarification plants, a waste water treating plant having a capacity of 2100 g.p.m. using these developments was placed in service late in 1943 for recovery of solids from a board mill waste water; and to clarify the water sufficiently to permit disposal.

At the time the sale of this equipment was negotiated, this waste water had a suspended solids content of 1.6 to 2.0 pounds per 1000 gallons and testing procedure previously described indicated that a clarified water containing about 0.1 pound suspended solids per 1000 gallons could be produced, an indicated solids removal of about 95%. However, by the time the equipment was placed in service, mill production had been stepped up and, as a result, the equipment was called upon to handle a waste water containing from 4 to 10 pounds suspended solids per 1000 gallons. This high concentration of solids applied to a machine designed to handle much lower concentrations; the presence of rags, cellophane, and other foreign material of large size which clogged waste water inlet distributor and slurry discharge facilities; and air leakage in the pump supplying the waste water to the treating plant, caused operating difficultities and resulted in poor separating efficiency.

Elimination of air leakage at the supply pump overcame a troublesome flotation effect; field changes in the waste water inlet distributor eliminated clogging previously experienced at this point; and field changes in connection with the slurry concentrating compartments further improved the operation. Considerable additional work remains to be done in the way of enlarging sludge blowoff and concentrator discharge piping to eliminate clogging by rags, cellophane, and similar foreign material which should be removed by screening prior to treatment.

In the treatment of this waste water, addition of a coagulant is necessary to obtain satisfactory recoveries, and alum dosages of 5 to 8 grains per gallon (0.7 to 1.14 pounds per 1000 gallons) have been found necessary. With coagulant dosages of this order and with the plant operated at 66 to 75% of its rated capacity, results such as the following have been obtained:

TABLE I.—POUNDS SUSPENDED SOLIDS PER 1000 GALLON

Waste to Treating Plant	Clarified Water	Sludge Discharge	Recovery
lb.	lb.	lb.	%
6.25	0.35	36.2	94.5
9.60	0.325	34.1	96.5
8.00	0.80	38.7	90.0
7.75	0.30	...	97.0
6.2	0.12	40.0	98.0
8.62	0.14	35.7	98.5
4.95	0.14	40.5	97.3
9.75	0.13	41.8	98.5

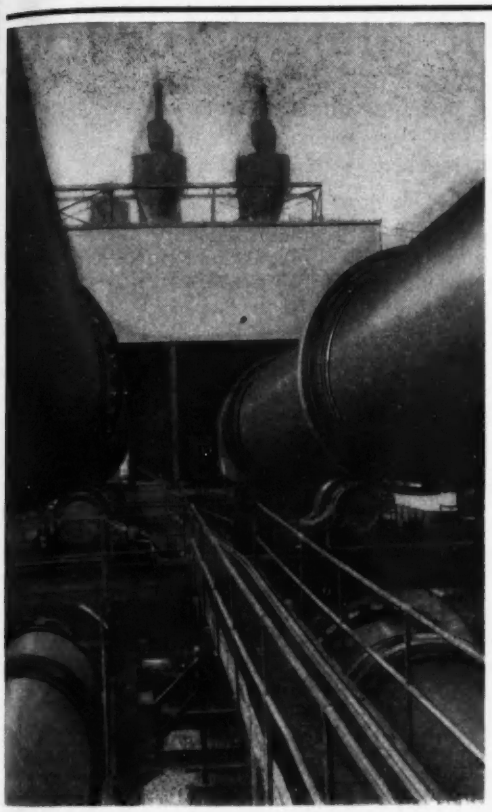
Results of this nature are not consistently obtained under present operating conditions but they are indicative of the possibilities of equipment of this type for such service when operated within the limits for which it is designed. On the basis of experience to date, there is confidence that equipment can be provided for waste water treatment which will consistently produce a clarified effluent averaging 0.088 pound suspended solids per 1000 gallons (10 p.p.m.) or less; and deliver a thickened, recovered slurry of fiber and filler containing 50 to 100 pounds suspended solids per 1000 gallons.

Chemical Engineering Nomographs

The McGraw-Hill Book Company has just published a book by a former member of TAPPI, Dale S. Davis, mathematician for the Wyandotte Chemicals Corporation. Mr. Davis was formerly with the Mead Corporation. Its title is Chemical Engineering Nomographs (310 pages). The present collection attempts to select critically a limited number of alignment and line coordinate charts of proved practical value to chemical engineers and to analytical, control, and physical chemists. All of the charts are easily read. In a recent bibliography of about 200 references to alignment charts, fully 90% were concerned with pulp and paper, textile, petroleum, refrigeration, dairy, fuel and chemical industries. More than 200 charts are shown covering fuel analysis, thermal values, heat transfer coefficients, pH, vapor pressure-temperature-concentration relationships, flow of fluids, solubility, tank mensuration, viscosity, etc. One chapter is devoted to nomographs of interest to the paper industry. This includes bleach consumption, calender roll weight, core waste, paper drying, effluent losses, filler retention, freeness consistency and temperature corrections, kraft production, paper rigidity, stiffness and softness, roll length, specific gravity, pulp viscosity, sulphite waste liquor solid content, and paper winding, together with detailed explanations. Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 E. 42nd street, New York 17, N. Y., at $3.50 per copy.

J. P. Strasser Elected Vice President

Stein, Hall & Co., Inc., New York, manufacturers and distributors of starches, gums and dextrines, and importers of burlap and other commodities, has announced the election of J. P. Strasser as a vice-president of Stein, Hall Manufacturing Company, Chicago. As manager of the Paper Departments of Stein, Hall & Co. and Stein, Hall Manufacturing Company of Chicago, Mr. Strasser is well known to paper mill men throughout the country.



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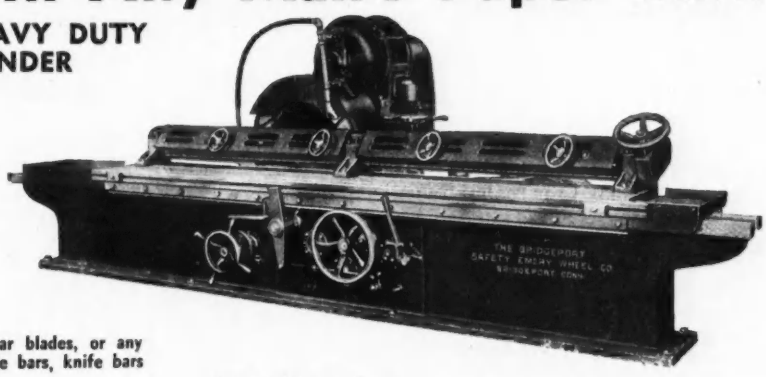

Also an excellent grinder for veneer knives, shear blades, or any miscellaneous grinding. Operates with various angle bars, knife bars and chucks (including magnetic).

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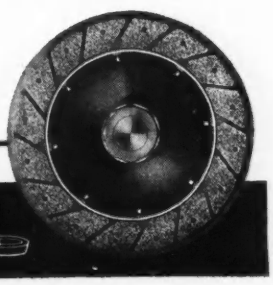

New York Paper and Pulp Market Review

Paper For Civilians Is Further Reduced In Current Quarter — New Supply of Wood Pulp Is Larger This Quarter—Summer Waste Paper Salvage Drive Set Up Excellent Record — Rags Active.

Office of the PAPER TRADE JOURNAL,
Wednesday, October 18, 1944.

With government requirements for paper increasing and reaching a wartime peak this month, the prospect for more paper on the home front correspondingly diminishes. More paper is expected to become available when Germany is defeated. But this may not occur this year. The Department of Commerce in its current report states that statements of government and military leaders indicate that V-E Day may not come until some time in 1945. The report goes on to say that an official analysis of the Japanese war indicates that a minimum of 1½ years can be expected before Japan is defeated. The Department estimates that the civilian paper supply in the current quarter will be 75% of the output, compared with 81% in the first quarter of this year.

Wood Pulp

The new supply of wood pulp is estimated at about 2,858,000 tons for the current quarter. This is made up of 2,598,000 tons of domestic pulp and about 260,000 tons of imported pulp. Total U. S. production, all grades, was 6,664,000 tons for the first 8 months of 1944, compared with 6,359,000 tons for the like period in 1943, an increase of 4.8%, the Department of Commerce reports. The largest increase was in the miscellaneous grades, 22.3%; the greatest increase occurred in groundwood, 23.4%.

Rags

Mill buying as a whole is reported as a little less active in absorbing new cotton cuttings this week, although the market continues definitely active. Prices are firm at ceiling levels.

Mill demand for roofing rags is reported less active at this date. Reports also indicate that mill inventories are now relatively high. Prices are quite firm at ceiling levels.

Old Rope and Bagging

No change of importance has been reported in old rope this week. Most fibers are in strong demand with Manila at the top of the list. Prices are firm at ceilings.

Less strength in the old bagging market is reported at this date. Previous signs of increasing activity have faded and the market is slow with prices soft and nominal.

Old Waste Paper

Mill demand for waste paper continues active in all grades with folded news reported scarce in the local market. All grades of paper stock are reported being freely absorbed by mills. Many board mills report their requirements are unsatisfied. Prices are firm at ceilings.

Collections of waste paper resulting from the August to October drive are reported very good by the Department of Commerce. It reports total receipts for the first 8 months amounted to 5,640,000 tons, compared with 4,712,000 tons for 1943. The figures include some broke in 1944, which was not included in the 1943 figures.

Twine

No important change has been reported in the supply situation or in prices of twine this week. Demand is active for the limited types of twine available for civilian use.

To Be Hydro-Heater Licensee in Canada

The Hydro-Heater Corporation, Milwaukee, Wis., has appointed Chemipulp Process, Limited, Montreal, as sole licensee in Canada for Hydro Heater applications in sulphite pulping process digester service.

The Hydro-Heater is a simple, noiseless, non-scaling device for heating liquids with live steam. It has proven an economical and thoroughly adequate element in control of the sulphite pulping process and its acceptance in this field is shown by twenty-seven installations since 1940, with more in construction and active design state.

To insure proper adaptation to the various conditions and requirements of individual mills, inquiries should be addressed to Chemipulp in Montreal.

Heads Quaker City Fine Paper Dept.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., October 16, 1944—Announcement is made by W. B. Killhour, president of Quaker City Paper Company, of the appointment of Raymond G. Underdown as manager of the company's fine paper division, supplanting former manager Alexander R. Williams who tendered his resignation last month. Mr. Underdown, because of his long experience in the paper industry, is particularly fitted to his new responsibilities. Mr. Killhour also announced the return of vice-president of the company Robert S. Reed, who has been absent for several months on account of illness.

Hubbs & Howe Move to Larger Quarters

The Hubbs & Howe Company, "The Paper and Twine People" of Buffalo, N. Y., moved early in October from 495-97 Seneca street to their own recently purchased and reconstructed building at 1702-16 Elmwood Avenue, Buffalo 7. Greatly increased floor space and enlarged offices are now provided for the steadily expanding business of Hubbs & Howe and for their affiliated Company, Holland Paper Company, who share the new building and who specialize in fine printing papers. Both organizations are part of the group known as the Hubbs Houses.

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MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, October 18, 1944.

BLANC FIXE—Quotations on blanc fixe continue firm and unchanged. Demand is moderate. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is quoted at $60 per ton, f.o.b. works.

BLEACHING POWDER—Current demand is heavy but supply is reported adequate, as production is high. Quotations are unchanged. Prices on bleaching powder range from $2.50 to $3.10 per 100 pounds, in drums, car lots, at works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 24 cents per pound; 2,000 pounds, 24¼ cents per pound; less than 2,000 pounds, 24¾ cents per pound, f.o.b. shipping point.

CAUSTIC SODA—Demand continues very heavy. Production high but supply is inadequate. Market is tight. Solid caustic soda is quoted at $2.30 per 100 pounds; flake and ground is quoted at $2.70 per 100 pounds; all in drums, car lots, at works.

CHINA CLAY—Quotations on china clay are unchanged. Current demand is reported fair. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mine. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Demand reported heavy with essential requirements met. Paper allocated 43,196 tons in current quarter. Quotations are unchanged. Chlorine is currently quoted at $1.75 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN—The rosin market reports lower prices on some grades this week. "G" gum rosin is currently quoted at $5.55 per 100 pounds, in barrels, at Savannah. "FF" rosin is currently quoted at $5.51 per 100 pounds, in barrels, at New York. Seventy per cent gum rosin size is currently quoted at $5.82 per 100 pounds, f.o.b. works.

SALT CAKE—Prices on salt cake are reported unchanged for the current week. Consumption is reported moderate for the week. Domestic salt cake is quoted at $15 per ton, in bulk. Chrome salt cake is quoted at $16 per ton. All prices in car lots, f.o.b. shipping point.

SODA ASH—Heavy demand continues for domestic requirements and market is tight. Shipments in bulk prompt; delay in bagged lots. Quotations continue unchanged. Current prices, car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Record corn crop enhances prospect of more satisfactory supply situation in future. Quotations unchanged. The pearl grade is quoted at $3.72 per 100 pounds; powdered starch at $3.83 per 100 pounds; all prices in bags, car lots, f.o.b. Chicago.

SULPHATE OF ALUMINA — Demand reported good. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.25 per 100 pounds, in bags, car lots, f.o.b. works. The iron free is currently quoted at $1.85 per 100 pounds, in bags, at works.

SULPHUR—Quotations on sulphur continue to conform to prevailing market prices. Demand active. Annual contracts are quoted at $16 per long ton, f.o.b. mines; the price at Gulf Ports is $17.50 per long ton.

TALC—Prices on talc continue unchanged. Demand good. Domestic grades are currently quoted at from $16 to $21 per ton at mines; Canadian at $24 per ton. All prices in car lots.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

Standard News, per ton—			
Roll, contract	*$58.00	@	—
Sheets	66.00	"	—
*OPA Maximum Price.			
Kraft—per cwt.—Carload Quantities Zone A, f.o.b. Mill			
Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag	*4.375	"	—
*OPA Manufacturers' Prices.			
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½	1.00	"	—
White No. 2	.90	"	—
Anti-Tarnish M.F.	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Toilet—1 M. Sheets—Per Case			
Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.20	"	—
Bleached, Jr.	3.20	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	11.25	@	—
No. 1 Manila Wrapping, 35 lb.	6.00	"	6.25
No. 2 Manila Wrapping, 35 lb.	5.75	"	6.00
Boards, per ton—			
News	*48.00	@	—
Chip	*48.00	"	—
Sgl. Mla. Lt. Chip	*60.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*63.00	"	—
Binders Boards	84.00	"	116.00

*OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$39.10@$46.00	$40.25@$47.25
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	29.90 " 35.00
75% Rag	23.00 " 27.00	24.15 " 28.25
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$10.55@$12.75	$11.70@$14.25
No. 2	9.65 " 11.75	10.80 " 13.25
No. 3	9.20 " 11.25	10.35 " 12.50
No. 4	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper, Delivered in Zone 1:

No. 1 Glossy Coated	$13.65	@	$15.50
No. 2 Glossy Coated	12.40	"	14.00
No. 3 Glossy Coated	11.60	"	13.25
No. 4 Glossy Coated	11.15	"	12.75
No. 1 Antique (watermarked)	10.25	"	11.75
No. 2 Offset	9.60	"	11.00
A Grade E. F.	9.35	"	10.75
A Grade S. & S. C.	9.60	"	11.00
B Grade E. F.	8.85	"	10.25
B Grade S. C.	9.10	"	10.50
C Grade E. F.	8.55	"	9.75
C Grade S. C.	8.80	"	10.00
D Grade E. F.	8.25	"	9.50
D Grade S. & S. C.	8.50	"	9.75

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight Not Exceeding OPA Allowances.

Bl. Softwood Sulphite	$86.00
Unbl. Softwood Sulphite	74.00
Bl. Hardwood Sulphite	83.50
Unbl. Hardwood Sulphite	71.50
Bl. Mitscherlich	81.00
Unbl. Mitscherlich ..72.00 @	82.00
N. Bleached Sulphate	86.00
S. Bleached Sulphate	79.00
N. Semi-Bleached Sulphate	82.00
S. Semi Bleached Sulphate	75.00
N. Unbl. Sulphate	73.00
S. Unbl. Sulphate	63.50
Bl. Soda	72.00
Unbl. Soda	68.00
Groundwood	50.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area)	10.50
West Coast (out area)	16.50

	50%-80% Air Dry Weight
Northeast	11.50
Lake Central	11.50
Southern	14.00
West Coast (in area)	9.50
West Coast (out area)	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices.

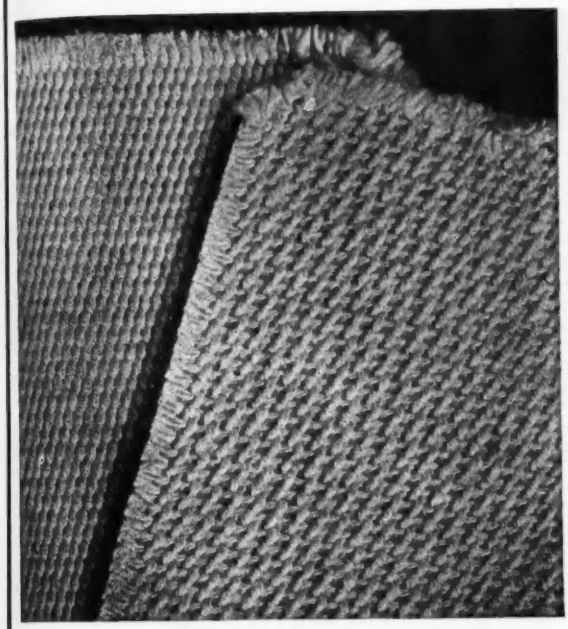
Domestic Rags

New Rags (Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.25*
Silesias No. 1	—	"	5.75*
New Unbleached	6.75	"	7.50*
Blue Overall	—	"	5.50*
Fancy	—	"	3.50*
Washables	—	"	3.00*
Bleached Khaki Cuttings	—	"	4.25*
Unbleached Khaki Cuttings	—	"	3.50*

*OPA Maximum Prices.

BRANDON DRYER FELTS



Manufactured from the raw cotton to the finished felt

BRANDON EXTRA

TRI-UMPH all cotton, 3 ply 53 oz., widths up to 250".

ZEPHYR all cotton, 3 ply 45 oz., widths up to 196".

ZEPHYR cotton-asbestos 3 ply Face 50% asbestos, back open construction for high porosity. Widths up to 166".

HINDLE S/54 all cotton special weave. Extra heavy duty Pre-shrunk, high porosity, widths up to 170".

SCAPA-HALL S/46 and S/46A. Available after VICTORY.

Sole Sales Agents

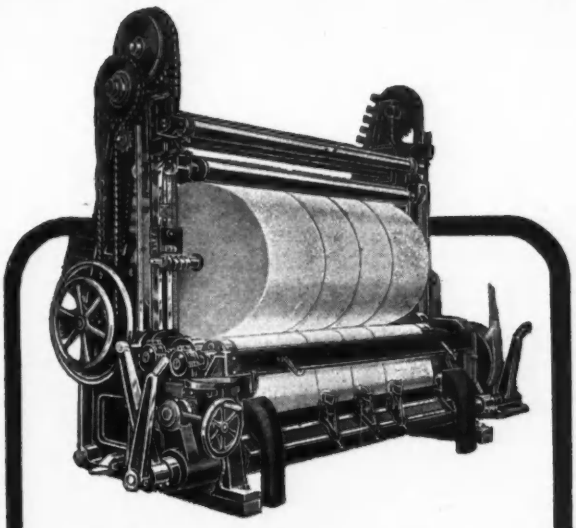
WOODWARD, BALDWIN & CO.

117 W. Baltimore St.

Baltimore, 1, Md.

Representatives:

J. S. Harrington, Watertown, N. Y.
C. B. Smith, Kalamazoo, Mich.
Christian Co., Richmond, Va.
D. H. White, Standard Supply Co., New Orleans
Frank P. Wilder, Portland, Ore.
James A. Taylor & Son, Portland, Maine



FOR A PRACTICAL POSTWAR PLANNER

Practical postwar planners do not look for slitters and roll winders with "Rube Goldberg" trimmings. They want winders that will keep well ahead of the paper machine at any paper making speed; winders that are easy to thread and that turn out rolls uniformly wound from the core out. For the finishing room they want fast slitters equipped for quick respacing of cutters and designed to convert rolls of controlled density, accurate as to strip width.

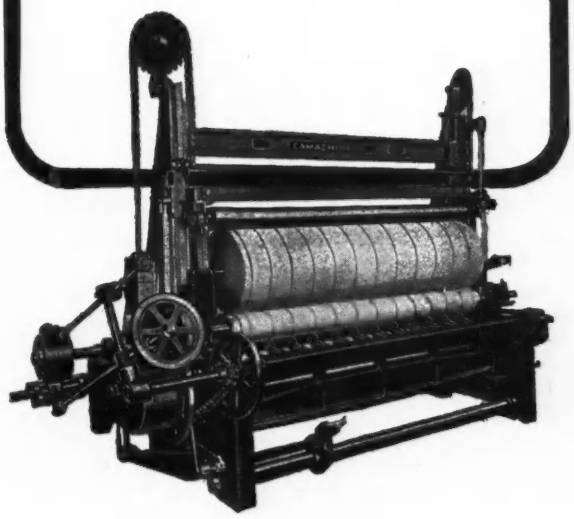
Such modern slitters and roll winders are built by this company.

Write for further interesting details.

CAMERON MACHINE CO.

61 POPLAR STREET BROOKLYN 2, N. Y.

Midwest Office: 111 W. Monroe St., Chicago 3, Ill.



Old Rags

White, No. 1—			
Repacked	*3.80	@	—
Miscellaneous	*3.20	@	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	@	—
Third and Blues—			
Repacked	*2.20	@	—
Miscellaneous	*1.80	"	—
Roofing Rags			
No. 1	*1.55	@	—
No. 2	*1.45	@	—
No. 3 (Bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

OPA Maximum Prices

Foreign Rags

All Prices nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shoppertes	1.30	"	1.45
New Shoppertes	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1			
Foreign	Nominal		
Domestic	4.25	@	4.35
Wool Tares light	4.25	"	4.50
Wool Tares heavy	4.50	"	5.00
Bright Bagging	4.50	"	4.85
Manila Rope			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	2.00	"	—

*OPA Maximum Price.

Old Waste Papers

(New York)

OPA Maximum Prices, Baled

No. 1 New White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.87½	"	—
No. 2 Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 2 Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	.67½	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Mixed Books	1.10	"	—
No. 1 White Ledger, colored	2.30	"	—
	2.00	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.62½	"	—
Extra Manilas	1.95	"	—
Mixed Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75		
Old Corrugated Containers	1.40	"	—
Boxboard Cuttings			
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
Mill Wrappers	1.10	"	—

Twines

All Prices Nominal

F. o. b. Mill

Soft Fiber

Coarse Polished—			
India	24	@	—
White Hemp	21	"	—
Fine Polished			
Fine India	40	"	—
Unpolished			
Box	17½	"	—
Paper Makers	17	"	—
Tube Rope	19	"	—
Wall Paper	20½	"	—
Wrapping	23	"	—
Soft Fiber Rope	19	"	—
Cotton	25	"	—

Hard Fiber

Medium Java	18	"	—
Mex. Sisal	16	"	—
Manila		"	—

PHILADELPHIA

Domestic Rags (New)

(Prices to Mill)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¾
Light Silesias	.05¾
Black Silesias, soft	.03¾
New Unbleached	.07½
Washable Prints	.04¾
Washable No. 1	.03
Blue Overall	.05½
Cottons According to grades—	
Washable shredding	.01¾
Fancy Percales	.04¾
New Black Soft	.03¼
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04¼
Men's Corduroy	.03½
Ladies' Corduroy	.03
Cottonades	.03¼

Domestic Rags (Old)

White No. 1 Repacked	3.80	@	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	@	—
White No. 2 Repacked	2.90	"	—
Thirds and Blues Miscellaneous	1.80	@	—
Repacked	2.20	"	—
Black Stockings— (Export)	Nominal		
Rooting Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Rooting Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

F. o. b. Phila.

Gunny No. 1			
Foreign	Nominal		
Domestic	3.00	"	3.50
No. 1 Clean bright—			
Sisal Strings			.04
No. 2 Clean bright—			
Sisal Strings			.03
Sisal Jute	.02½	"	.02¾
	.03	"	3.50
	.75	"	1.80
			4.25

Burlap	3.00	"	3.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

F. o. b. Phila

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½		
No. 1 Hard White Shavings, unruled	2.87½		
Soft White Shavings, one cut	2.50		
White Blank News	1.65		
Soft White Shavings, Misc.	2.15	"	
No. 1 Fly Leaf Shavings	1.67½	"	
No. 2 Fly Leaf Shavings	1.12½	"	
No. 1 Groundwood Fly Leaf Shavings	1.25	"	
No. 2 Groundwood Fly Leaf Shavings	.90	"	
Mixed Colored Shavings	.75	"	
Mixed Groundwood Colored Shavings	.90	"	
Overissue Magazines	.67½	"	
No. 1 Heavy Books & Magazines	1.92½	"	—
Mixed Books	1.10	"	—
No. 1 White Ledger, colored	2.30	"	—
	2.00	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.62½	"	—
Extra Manilas	1.95	"	—
Mixed Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75		
Old Corrugated Containers	1.40	"	—
Boxboard Cuttings			
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
Mill Wrappers	1.10	"	—

Twines

All Prices Nominal

F. o. b. Mill

Soft Fiber

Coarse Polished—			
India	24	@	—
White Hemp	21	"	—
Fine Polished			
Fine India	40	"	—
Unpolished			
Box	17½	"	—
Paper Makers	17	"	—
Tube Rope	19	"	—
Wall Paper	20½	"	—
Wrapping	23	"	—
Soft Fiber Rope	19	"	—
Cotton	25	"	—

Hard Fiber

Medium Java	18	"	—
Mex. Sisal	16	"	—
Manila		"	—

BOSTON

Old Papers

F. o. b. Boston

OPA Maximum Prices, Baled

No. 1 Hard White Shavings, unruled	2.87½	@	
No. 1 Hard White Shavings, ruled	2.50		
Soft White Shavings, Misc.	2.15		
No. 1 Fly Leaf Shavings	1.67½		
No. 2 Fly Leaf Shavings	1.12½		
No. 1 Groundwood Fly Leaf Shavings	1.25		
No. 2 Groundwood Fly Leaf Shavings	.90		
Mixed Colored Shavings	.75		
New Manila Envelope Cuts, one cut	2.87½		
Hard White Envelope Cuts, one cut	3.37½		
Triple Sorted No. 1 Brown Soft Kraft	2.50		
Mixed Kraft Env. & Bag Cuttings	2.75		
Kraft Envelope Cuttings	3.25		
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Cuts, one cut	2.87½		
New Manila Envelope Cuttings	2.62½		
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65		
No. 1 Assorted Old Kraft	1.75		
No. 1 Mixed Paper	.95	"	—
Overissue News	1.10	"	—
Soft Boxboard Cuttings	1.00		
New Corrugated Cuttings, Kraft	2.25		
Old 100% Kraft Corrugated Containers	1.75		
Old Corrugated Containers	1.40	"	—
Jute Corrugated Cuttings	1.07½		

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(Nominal)		
Domestic	—	@	2.50
Sisal Rope No. 1	*4.75		
Sisal Rope No. 2	*4.25		
Mixed Rope	—	"	1.55
Submission Rope—			
Foreign	(Nominal)		
Domestic	2.75		
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	
Soft Jute Rope	5.25	"	—
Jute Cut Threads	3.00		3.50
Bleachery Burlap	8.50		9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	—	"	2.75
South American	—	"	3.00

Wool Tares—			
Foreign	(nominal)		
Domestic	4.25		
Aust. Wool Pouches	—	"	3.50
New Zealand Wool Pouches	—	"	3.50
New Burlap Cuttings	4.75	"	.00
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Roofing Bagging	1.35	"	—

*OPA Maximum Price

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¼	"	.04
New White No. 1	.06¼	"	.07
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06¼
Underwear Cutters, Bleached	.06¼	"	.06¾
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06¾
New Black Silesias	.03	"	.03½
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06½	"	.06¾
Blue Cheviots	.05½	"	.06
Fancy	.02¾	"	—
Washable	.02¼	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03¼	"	.03½
New Canvas	.06¼	"	.06¾
B. V. D. Cuttings	.06¼	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—
Miscellaneous	3.20	"	—
White No. 2—			
Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls	2.25	"	2.30
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings	3.50	"	4.00
Rooting Stock—			
No. 1	1.55	"	—
No. 2	1.45	"	—
No. 3	1.35	"	—
No. 4	1.35	"	—
No. 5, Quality A	1.35	"	—
Quality B	1.20	"	—
Quality C	.95	"	—
*Old Manila Rope	5.75	"	—

*OPA Maximum Prices

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

F. o. b. Chicago

OPA Maximum Prices, Baled

Shavings			
No. 1 Hard White Envelope Cuts, one cut	3.37½		
No. 1 Hard White Shavings, unruled	2.87½		
No. 1 Soft White Shavings			
No. 1 White Ledger	2.30	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
White Blank News			
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft			—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
Rooting Rags	1.35	"	—
No. 1 Roofing Bags	1.45	"	—